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THE CORRELATION OF THE VOLATILITY OF FUTURE MARKET AND STOCK MARKET – A STUDY IN VIETNAM WITH 2 STAGES: COVID-19, AND GEOPOLITICS – UKRAINE INVASION

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Abstract. *Since the Vietnamese derivatives market was established, futures contracts as the representative financial instrument trading in the derivatives market. The research investigates the correlation between the spot market and the futures markets in Vietnam in which VN30 and VN30 Futures Index was chosen as research sample. Additionally, the deposit interest rate with different terms was also involved to declare the correlation between these two markets. The ARMA/GARCH model was employed to examine the volatility of the spot market, futures market, and the deposit interest rate (overnight, spot week, one – month, three – month, six – month, nine – month). The VAR model was employed next step to explore the correlation as well as the impact on each other. The results indicate that the tight relationship between the futures and the spot market while a negative relationship between the deposit interest rate and the spot/future market was found. Especially, the examining term has been divided into 2 special stages: the Global Health Crisis (Covid-19: 2020-2021) and the Geopolitics – Ukraine invasion (2022 – present) to clearly observe the correlation among three research factors.*

Keywords: *Volatility, Spot Market, Future Market, ARMA/GARCH, VAR, Covid-19, Geopolitics – Ukraine invasion.*

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Introduction

Background Research

Vietnamese stock market is considered one of the frontier markets but in 2022, Vietnam has outperformed with the GDP growth rate of 8.02% (VNA, 2023), the remained one-number inflation (4.31%, tradingeconomics). By the end of February 2023, the record of Vietnam domestic stock trading accounts demonstrated nearly seven million accounts including both individual and proprietary. The amount only counted for 7 percent of total Vietnamese population while many assessments have been made and considered that the market of Vietnam as a potential market based on GDP, inflation rate, and especially stock market and worth for investment since the valuation via P/E index is quite affordable.

In August 2017, the VN30 future contracts were officially traded with the base VN30 index. A lot of existing paper indicated the two-side impact in both positive and negative aspects between the underlying stock markets versus derivative markets in which available for trading in Vietnam is future markets. The report from Vietnam National Institute for Finance (Vu Chi Dung, 2022)

clearly stated the expression of this interrelationship based on five main aspects: (i) Derivatives markets contribute to the efficiency of price formation on the underlying stock markets; (ii) The liquidity of the underlying equities markets is promoted by the derivatives markets; (iii) Underlying stock markets bring condition to a better performance of derivatives markets and for investors in hedging portfolio and seeking for profit; (iv) Derivatives markets can be used to manipulate the underlying stock markets and vice versa; (v) The consequence of the derivative markets break can affect directly the underlying equities markets and the whole financial system. On the other hand, from 2018 to 2021, a downward trend was recorded about the Vietnam deposit rates due to the implementation of monetary policies with the purpose of reducing the interest rate to stimulate economic growth. Then, in 2022, the rate soared up significantly due to the rise of inflation and attracted a large amount of money.

Research Problem

While a lot of newspapers mentioned the significant rise of the deposit interest rate, the remarkably fall of the VN30 Index and the Futures trading volatility simultaneously was also noticed and reported by plenty of financial channels, newspaper (https://vnexpress.net/). This inverse effect raised a question that whether the deposit interest rate affects the volatility of the spot/futures markets and whether the relationship between the two markets is highlighted clearly by the volatility of deposit interest rate? Since year 2005, Vietnamese stock market has suffered chronological events that affected directly on its volatility which are the Global Financial Crisis (GFC) in 2007-2008, pre and post – Covid-19 (2020-2021), and the Russo – Ukraine war. The emergence of these events led to the fall of the market and reflected the fear of investors and the risks that the stock market may face. Limited research exists on the impact of Ukraine invasion on Vietnam's stock market volatility compared to studies on the effects of GFC, pandemic, and geopolitical events on global stock market. This study aims to investigate the market volatility and the correlation among these markets under three events objectively. However, due to the VN30 Futures contracts' issuance in 2017, the research focused on the more recent events (Covid-19) and ongoing Ukraine invasion. The other raised question is whether these periods deeply affected the volatility and the relationship between the spot and future markets.

The expectation of this research would be about the strongly emphasizing on the two – way impacts from the underlying market and futures market through the results of the applied models. Also, the findings from VAR model and relating analyses may help in declaring the role of futures trading in price discovery for the underlying asset in the spot market. Moreover, the findings may bring about meaningful implications to potential investors.

Literature Review

1.1. Relevant Theoretical Frameworks

The linkage between the underlying market and the futures market, and the impact of the deposit interest rate on these markets can be explained by the arbitrage pricing theory developed by the economist Stephen Ross in 1976. The theory implies that investors can generate a risk – free profit by exploiting price discrepancies between two or more markets. The highlighted point is the possibility of arbitrage when the futures price of an asset is remarkably above its spot price. Statistical arbitrage deals with simplest financial instruments like stocks, futures, and currencies (John C. Hull, 2002; Ernest P. Chan, 2021). The relationship between the deposit interest rate and the stock market return or index can be explained based on financial intermediation theory and asset pricing model. According to Financial Intermediation Theory, the deposit interest rate and stock market are interconnected through the functioning of financial institutions. Stock market investments can be a portion of deposits (Anjan V. Thakor & Arnoud W. A. Boot, 1960). Expected returns, risk considerations, and regulatory requirements are considered as factors influencing investing in stock decisions. Higher interest rates may encourage saver to deposit more money and thus, the funds available for investment in the stock market are potentially increased and vice versa. Capital Asset Pricing. Model $ER_i = R_f + \beta_i(ER_m - R_f)$ is well – known for understanding how changes in interest rates can affect stock market valuations. In the model, the risk – free rate is often

measured as government bond yields, or the deposit interest rates often approximated by this short – term yields. Obviously, the changes in the risk – free rate can impact on the investor's required returns and their tendency when investing in stock. Furthermore, the Monetary Policy and Interest Rate Changes theory was applied to engage the relationship between the deposit rate and the stock market. The theory suggests that the rise or fall of the interest rate by the central banks in managing inflation or stimulate economic growth, it can have ripple effect on future/spot markets. In specific, higher deposit rates may attract more funds, potentially reducing liquidity in the markets and affecting the future as well as the underlying stock market prices and vice versa. As those theories implied about the fluctuations of the deposit rate impact on the stock market that involved the investor's behavior while making decisions on investments. Thus, the Portfolio theory and the Expectation theory can be applied to reinforce the frameworks for the relationship between the deposit interest rate and the spot as well as future market. Harry M. Markowitz (1959) introduced portfolio theory and the concept of diversification. In this context, the deposit rate can be viewed as a low – risk investment option, while the future or spot markets offer higher – risk, higher – return opportunities.

Table 1
Vietnamese Deposit Interest Rate

	overnight	spot week	1-month	3-month	6-month	9-month
25/04/2023	5.07	5.14	5.56	7.46	8.33	8.6
31/12/2022	2.81	5.08	8.17	9.09	10.91	9.61
31/12/2021	0.81	1.93	3.8	3.68	3.74	3.26
31/12/2020	0.15	0.26	0.42	2.33	3.44	3.08
31/12/2019	1.52	2.27	3.53	4.06	5.11	5.86
31/12/2018	3.91	4.16	4.85	5.6	6.2	5.2

**Source: Database of Thompson Reuters*

The correlation between the deposit rates and market price could reflect the investors' preferences for risk allocation and their decisions to reallocate funds between these different investment options. The expectations theory states that the spot prices should be equal to the expected future spot price implied by the current futures price and the interest rate (Zvi Bodie et al., 2021). If the future price is higher than the spot price, a suggestion is presented that the investors are attracted to the spot price for an increase in the future, and vice versa.

1.2. Studies on Fundamental Linkages between Spot and Derivative Markets

The relationship between the underlying market and the futures market was examined by plenty of empirical results. Becketti & Dan J. Roberts (1990) concluded that stock index future has not increased stock market volatility whether measured by frequency or the size of large swings in stock price. According to Don M. Chance & Robert Brooks (2000), the derivatives instruments' performance depends on how other financial instruments perform. Several research has indicated the two-sided relationship in both positive and negative aspects of the stock markets and derivative markets (Kang et al., 2013, Carpenter & Whitelaw, 2017). Derivative instruments exist based on underlying securities. They reflect the change of underlying asset prices, and the future contracts reflect the investors' expectation on the equities market in future. Thus, this relationship has a close linkage and impact on each other.

1.3. The Deposit Interest Rate

It cannot be denied that the relationship between the deposit interest rate and the stock market is quite complex and can be influenced by various factors (economic conditions, investment sentiment, monetary policy, etc.). Several empirical research are employed to examine the dynamics and causal relationship between these two variables.

There is an array of research that can be taken as examples, with the findings on the negative relationship between interest rate and stock return or stock price. They (Bhuiyan & Chowdhury, 2020; Humpe & P. Macmillan, 2007; Phuyal, 2016; Shahnaz Mashayekh et al., 2011) both conclude

about the relationship and these findings also guarantee the consistency with Dividend Discount Model.

1.4. The relationship between deposit interest rates and the spot/future markets

There were plenty of papers that indicated the correlation between the spot markets and the futures trading activity, or the stock market and the deposit interest rate such as Kumar (2009) and Sehgal et al., (2012). They illustrated a positive dynamics relationship between the spot market and the futures trading activity. Froot (1989) confirmed that a large part of the variance of excess stock returns is attributable to changing expectations of future excess stock returns. Campbell & Ammer, (1993) explored the correlation between stock returns, bond returns, and interest rates to shed light on the broader relationship between financial markets and interest rates.

1.5. Studies on Market's Volatility During Each Type of Events

The impact of pandemic has been found through several research from other countries as we understand that Covid-19 nearly hit the global. Nigeria's stock market performance can be taken as an example (Akinbobola, T.O., et al., 2022). Nguyen & Nguyen, (2022) applied the copula method to analyze the impact of Covid-19 pandemic and pointed out the dependence between the two – stock market: China (Shanghai Stock Exchange) and Vietnam (Vnindex). In addition, the impact of Ukraine invasion on global finance has been reported and rated at a high – intensity level. Several studies also examined the influences as well as the afterward effects on the global financial market (Izzeldin et al., 2023), on macroeconomic aspects such as bilateral trade, oil prices, etc. within Vietnam (Randall Puah, 2022), following the invasion.

1.6. Model Hypotheses

Based on related theories and empirical evidence presented above, we hypothesized that reviewing existing literatures from these mentioned above papers, publications, as well as books, the research hypotheses have been developed as below:

H1: There is a significant correlation among the spot market, futures market, and deposit interest rate.

Methods

2.1. Data Collection

The data was collected for the main variables in the study which are the closing price of the underlying market VN30 Index and future market based on monthly contracts that was issued since 2017. The VN30 future index presented by the VN30F1M's closing price as the observation shows more effective with one that short-term duration rather than a long – term contract based on the theory that the intrinsic value of the short – term contract is larger than the one has large time value then. Moreover, for the deposit interest rate, the data was collected with a variety of deposit terms which are: overnight, one week, one – month, three – month, six – month, and nine – month deposit rate. Noticeably, due to the limitation in interest rate collection, there was only data since august, 2018, the range time was reset again which was from August 2018 to April 2023. Additionally, we compared the collected data from the Thompson Reuters with the State Bank of Vietnam government website to confirm the limitation of the data. The subperiod is consisted of the Global Health Crisis (2020-2021), and the Ukraine invasion (February 2022-present).

2.2. Data Processing

The next step after collecting data is to gather all variables' numerical information and identify whether there are any outliers or missing values and treating them for the data cleaning. Moreover, the data was reported as having gap because in Vietnam, the stock exchange is activated in weekly days nor weekends and holidays. Thus, the gap is unavoidable. The distribution of variables with the number of observations of 1420 is illustrated in Table 2.

Overall, by Table 2 with the descriptive result about the dataset, it is obvious to observe that the mean of variables which is measure in return (RVN30, RVN30F, Ream…, Reninmrate) are positive and small except the negative mean of return on three-month deposit interest rate. In terms

of standard deviation, the return on the futures market seems the lowest one compared to other return.

Table 2
Descriptive Statistics

Varible	Obs	Mean	Std. dev.	Min	Max	Skewness test	Kurtosis
RVN30	1420	0.0003111	0.1087803	-0.37743	0.4457874	0.08845	3.73904
RVN30F	1418	0.0000966	0.0068994	-0.0314938	0.0294892	-0.49453	7.04078
Reamrate	1420	0.0002901	0.1035232	-0.6933901	0.7160033	-0.17156	15.71410
Reonrate	1420	0.0007438	0.0688337	-0.60206	0.4978059	0.17213	20.64087
Resw	1420	0.0006636	0.0770546	-0.7704644	0.7819442	0.07401	21.78441
Rethrmrate	1420	-0.0000241	0.074083	-0.3881802	0.4493909	-0.04569	9.55345
Resixmrate	1420	0.0001934	0.060842	-0.4461313	0.3973236	-0.06084	10.16269
Reninmrate	1420	0.0001578	0.0344376	-0.2233834	0.2347233	-0.04442	14.41892
VN30	1420	1058.893	240.227	610.76	1572.46	0.72177	2.31466
vn30fcp	1420	1056.097	241.4242	578.7	1568	0.69767	2.32359
Spotrate	1420	2.28557	1.783058	0.13	9.48	0.84270	2.75630
onrate	1420	2.08207	1.744363	0.1	8.44	0.81718	2.61776
onemrate	1420	2.996077	1.984277	0.25	10.88	1.05804	4.00408
thrmrate	1420	3.861451	1.951418	0.82	11.8	1.22209	4.74740
sixmrate	1420	4.752627	1.878599	1.21	12.14	1.48838	5.33770
ninemrate	1420	5.0495	1.828922	2.26	13	2.00712	7.98627

**Source: Author's elaboration*

On the other hand, return on all deposit interest rate shows quite high kurtosis (in range 9-22). Generally, the Kurtosis value of all the return is higher than 3, implying that the tailedness of return margin is long and thick, and not following any of normal distribution rule.

Table 3
Stationary Test

		Dickey – Fuller Crit.Value		
Variable	**Test Statistic**	**1%**	**5%**	**10%**
RVN30	-51.525	-3.43	-2.86	-2.57
RVN30F	-43.194	-3.43	-2.86	-2.57
Reamrate	-52.605	-3.43	-2.86	-2.57
Reonrate	-34.029	-3.43	-2.86	-2.57
Resw	-45.32	-3.43	-2.86	-2.57
Resixmrate	-52.335	-3.43	-2.86	-2.57

**Source: Author's elaboration*

As the dataset has the gap so the stationary checking was tested by Augmented Dickey – Fuller test. The result showed that the dataset has guaranteed its stationary condition.

2.3. Model:

2.3.1. The ARIMA regression: The ARMA/GARCH model was employed after running regression tests for the dataset to confirm there is no multicollinearity but the existence of heteroskedasticity. By applying GARCH, the volatility clustering and heteroskedasticity are captured. Moreover, GARCH model, according to (Zivot, 2009), is more advantageous than the ARCH model in estimating the random fluctuation of residuals from ARMA model.

The ARMA model was employed to examine the market (VN30) return and the return for future market, and for deposit interest rate under each term (spot week, a month, three months, and six months), which is computed by

$$R_{it} = \log\left(\frac{CP_{it}}{CP_{i,t-1}}\right) \quad (1)$$

In which: CP_{it} represents the closing price of index at time t, R_{it} is the change in index i at time t.

The optimal lag length for AR (r) and MA (s) used in this model were determined by using ACF and PACF indices.

$$\left(1-\sum_{i=1}^{t}\beta_i B^i\right)R_t=\left(1+\sum_{i=1}^{S}\gamma_i B^i\right)\varepsilon_t \quad (2)$$

In which: the backshift operator is B^i . β_i and γ_i are the coefficients from the ARMA model (the AR and MA parts). The residual is represented by ε_t . After running the model, the Ljung-Box portmanteau (Q) test was applied to confirm the ARCH effect for the dataset. The expectation in this study is that the residual would be independently and identically distributed.

$$Q=n(n+2)\sum_{j=1}^{m}\frac{1}{n-j}p^2(j)\rightarrow x_m^2 \quad (3)$$

m : the degree of freedom to model stationarity's test.

$p^2(j)$: the estimated autocorrelation of lag j.

As the null hypothesis (*H0*) for expectation the series follows a white noise process, implying no ARCH effects was rejected when the Ljung-Box test indicated the p-value higher than 5%. Thus, the research jumped to the next step which is the application of ARMA(r,s) – GARCH (p, q) model to eliminate the conditional variance of VN30 future.

$$\widetilde{\sigma}^2=\alpha_0+\sum_{i=1}^{q}\beta_i\varepsilon_t+\sum_{i=1}^{p}\gamma_i\sigma_{t-i}^2 \quad (4)$$

2.3.2. The application of the forecast error variance decomposition in the market volatility spillover estimation with VAR – a vector autoregression model: The VAR model is employed in examining the relationship among variables in the model with their market indices. Then, the optimal lag length was estimated by using AIC, HQIC, and SBIC indices and two lags for models with control variables have been indicated to be suitable for the VAR application.

The VAR model: $\Delta Y_t=\alpha+\beta_1\Delta Y_{t-1}+\beta_2\Delta Y_{t-2}+\cdots+\beta_p\Delta Y_{t-p}+\varepsilon_t$

Where:

$Y_t=Y_{1t},Y_{2t},\ldots,Y_{nt}$: Endogenous variables

β_i : Matrix with coefficients associated to lag i.

α : Vector with coefficients associated to the intercepts.

ε_t : Vector with innovations.

Table 4

Lagrange - Multiplier Test & Jarque - Bera test

Var Model			
Lagrange - Mulplier Test			
Lag	***Chi2***	***Df***	***Prob > Chi2***
1	*69.5833*	*49*	*0.02814*
2	63.3788	49	0.08127
H0: no autocorrelation at lag order			

Jarque - Bera test

Equation	***Chi2***	***Df***	***Prob > Chi2***
VN30	*832.86*	*2*	*0.00000*
Vn30fcp	*6.60E+05*	*2*	*0.00000*
Spot Week Rate	*1.30E+04*	*2*	*0.00000*
Onrate	*5590.382*	*2*	*0.00000*
Onemrate	*1274.64*	*2*	*0.00000*
Sixmrate	*214.193*	*2*	*0.00000*
Ninemrate	*5478.988*	*2*	*0.00000*
All	*6.90E+05*	*14.00*	*0.00000*

**Source: Author's elaboration*

Although the VAR stability test showed all variables under the entire period and geopolitics event satisfied the VAR condition, when conducting VAR model for variables under the sub-period – Covid-19, the var model is unstable due to the instability of VN30 index and VN30 future index variables. Thus, Var is conducted with difference of order 1 of these two variables. Moreover, after running VAR and conducting test, the three – month deposit interest rate has been eliminated to guarantee there is no autocorrelation in the equation. The result of postestimation – test is below.The Lagrange – multiplier test was conducted to assess whether there is any autocorrelation in the residual of the VAR model. At lag 2, we cannot reject the null hypothesis of no correlation since it is greater than 5 percent. Moreover, the VAR stability test showed the result that all variables satisfied the VAR conditions and lay inside the circle. The below table illustrates the VAR stability test and Granger Causality test result.

Table 5
Varstability Test

Eigenvalue	Modulus
0.9971767	0.997177
0.990976	0.990976
0.9514373	0.951437
0.8655907	0.865591
0.797424	0.797424
0.6221738	0.622174
0.5574171	0.557417
-0.4324334	0.432433
-0.4159855	0.415986
-.2443302 + .02016336i	0.245161
-.2443302 - .02016336i	0.245161
0.2237208	0.223721
-0.14248	0.14248
-0.04799673	0.047997
All The Eigenvalues Lie Inside the Unit Circle.	
VAR Satisfies Stability Condition.	

**Source: Author's elaboration*

By using Granger Causality, the reason impact has been illustrated obviously among tested variables. Through the Table 6, the underlying market (VN30) does not have causality relationship with the most variables while VN30, and one – month deposit interest rate does great Granger – cause the future market (vn30fcp). The test also illustrates that two markets (VN30, vn30fcp) do granger – cause the six – month deposit interest rate.

Table 6
Granger Causality Test

Equation	*Excluded*	*Chi2*	*Df*	*Prob > Chi2*
Vn30	***Vn30fcp***	*4.3943*	*2*	*0.111*
Vn30	***Spot Week Rate***	*0.49321*	*2*	*0.781*
Vn30	***Onrate***	*0.02163*	*2*	*0.989*
Vn30	***Onemrate***	*1.8779*	*2*	*0.391*
Vn30	***Sixmrate***	*0.43906*	*2*	*0.803*
Vn30	***Ninemrate***	*0.28191*	*2*	*0.869*
Vn30	***All***	*11.943*	*12*	*0.450*
Vn30fcp	***Vn30***	*46.16*	*2*	*0.0000*
Vn30fcp	***Spot Week Rate***	*0.62359*	*2*	*0.7320*
Vn30fcp	***Onrate***	*0.46758*	*2*	*0.7920*
Vn30fcp	***Onemrate***	*5.0227*	*2*	*0.0810*
Vn30fcp	***Sixmrate***	*0.34423*	*2*	*0.8420*
Vn30fcp	***Ninemrate***	*0.34556*	*2*	*0.8410*
Vn30fcp	***All***	*57.789*	*12*	0.0000

Onrate	***Vn30***	*0.19119*	*2*	*0.909*
Onrate	***Vn30fcp***	*0.02521*	*2*	*0.987*
Spot Week Rate	***Vn30***	*0.15301*	*2*	*0.926*
Spot Week Rate	***Vn30fcp***	*0.11168*	*2*	*0.946*
Onemrate	***Vn30***	*3.4727*	*2*	*0.176*
Onemrate	***Vn30fcp***	*4.1642*	*2*	*0.125*
Sixmrate	***Vn30***	*7.9857*	*2*	*0.018*
Sixmrate	***Vn30fcp***	*10.611*	*2*	*0.005*
Ninemrate	***Vn30***	*4.2073*	*2*	*0.122*
Ninemrate	***Vn30fcp***	*0.4012*	*2*	*0.818*

**Source: Author's elaboration*

This test analysis is performed by fitting the vector autoregressive model (VAR) to the time series with L time lags as below:

Let $X(t) \in R^{dx1}$ for $t=1,\ldots,t$ be a dimensional multivariate time series.

$$X(t)=\sum_{\tau=1}^{L} A_\tau X(t-\tau)+\varepsilon(t)$$

In which: $\varepsilon(t)$ is a white Gaussian random vector, A_τ is a matrix for every τ. A time series X_i is called a Granger cause of another time series X_j.

Finally, the impulse and response functions are used with applying the Cholesky forecast error variance decomposition.

Results

3.1. Estimating The Market Volatility Using ARMA/GARCH

Table 7 below presents the estimated results for entire period (08.2018 – 04.2023) which illustrated the ARCH – GARCH effects existed in all variables. It implied that the the market volatilities are affected by both volatilities and shocks from events in previous period. The results also were presented by variance constant graph to show the market volatilities across the variables.

Table 7

Volatility in the entire period (2018 - 4/2023)

Variance Equation	*RVN30*	*RVN30F*	*Reamrate*	*Resw*	*Reonrate*	*Re3mrate*	*Resixmrate*	*Reninmrate*
ARCH (α)	0.134***	0.331***	0.481***	0.499***	0.534***	0.564***	0.161***	0.0863***
	(0.0396)	(0.0311)	(0.0344)	(0.0454)	(0.0339)	(0.0389)	(0.0275)	-0.0114
GARCH (β)	0.553***	0.618***	0.784***	0.547***	0.292***	0.462***	1.187***	1.446***
	(0.20)	(0.04)	(0.03)	(0.0288)	(0.0203)	(0.0376)	(0.1120)	-0.0386
Constant	0.00292*	0.00000126	-0.00121***	0.000052	0.00133***	0.000330***	-0.00100***	-0.000604***
	(0.001720)	(0.000001)	(0.000142)	(0.000063)	(0.000078)	(0.000092)	(0.000292)	-0.0000352
(α + β)	0.68700	0.9490000	1.26500	1.04600	0.82600	1.02600	1.34800	1.5323
Standard errors in parentheses								
*** p<0.1, ** p<0.05, *** p<0.01**								

**Source: Author's Elaboration*

In term of the two markets, the VN30 futures index is more likely to be affected by its volatility from prior periods ($\beta\ of\ 0.61_8$) while considering all variables, the six months deposit rate has the highest $\beta\ of\ 1.18_7$, follows by the one month deposit rate ($\beta\ of\ 0.78_4$) and then VN30 future index and its underlying index. On the other hand, the overnight deposit rate seems to be least affected by the previous periods' volatility ($\beta\ of\ 0.29_2$).

The row of ($\alpha+\beta$) indicates the mean – reversion speed process of each variable. The number showed the value which is smaller than 1 has mean – reversion progress and the smaller value is, the faster the process is. Thus, the results show overnight rate has mean - reversion process (other type of deposit rate witnessed no mean – reversion) and the fastest one is VN30 index with the lowest value of 0.687 and the lowest one is VN30 futures index with value of 0.949. By this amount, it can be said that the return on VN30 futures index volatility is affected by shock in the long term.

Next, the estimation is conducted similarly to examine the volatility in two sub-periods: Covid-19 and the Ukraine invasion. The results from the two below tables also show that both volatility and shocks under these events affect the market fluctuation. These tables are presented below with the results confirm ARCH and GARCH effects to all variables.

Table 8

Volatility under the Covid - 19 (2020 - 2021)

Variance Equation	*RVN30*	*RVN30F*	*Reamrate*	*Resw*	*Reonrate*	*Re3mrate*	*Resixmrate*	*Reninmrate*
ARCH (α)	0.133**	0.661***	0.386***	0.545***	0.320***	1.453***	0.319***	0.0435***
	-0.0761	-0.0811	-0.0668	-0.0898	(0.0691)	(0.0755)	(0.0728)	-0.0114
GARCH (β)	0.553	0.230***	0.941***	0.508***	0.882***	0.0558*	-0.133*	1.630***
	-0.371	-0.0759	-0.0779	-0.0554	-0.0984	(0.0286)	(0.0723)	-0.104
Constant	0.00281	-0.0000117***	(-0.00332)***	0.000269	-0.00103**	0.000634***	0.00493***	-0.00128***
	-0.00294	-2.82E-06	-0.000886	-0.000226	-0.000518	(0.0000824)	(0.000391)	-0.000171
(α + β)	0.686	0.891	1.327	1.053	1.202	1.5088	0.186	1.6735
Standard errors in parentheses								
*** p<0.1, ** p<0.05, *** p<0.01**								

**Source: Author's Elaboration*

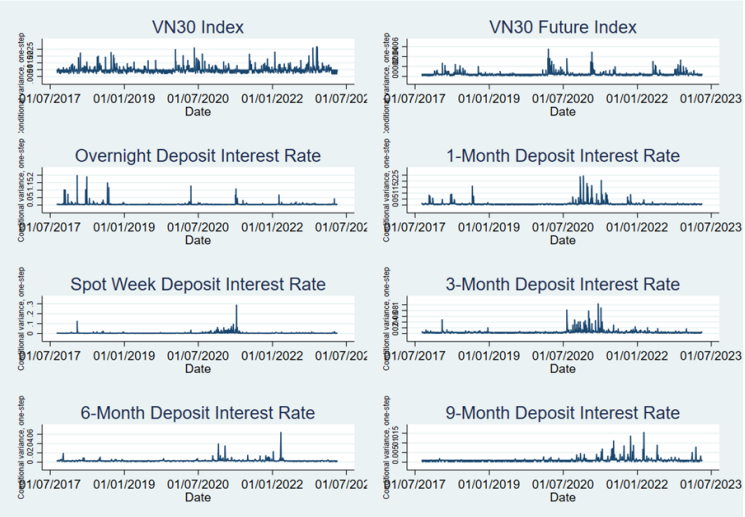

Figure 1. Market Volatility (entire period)

**Source: Author's Elaboration*

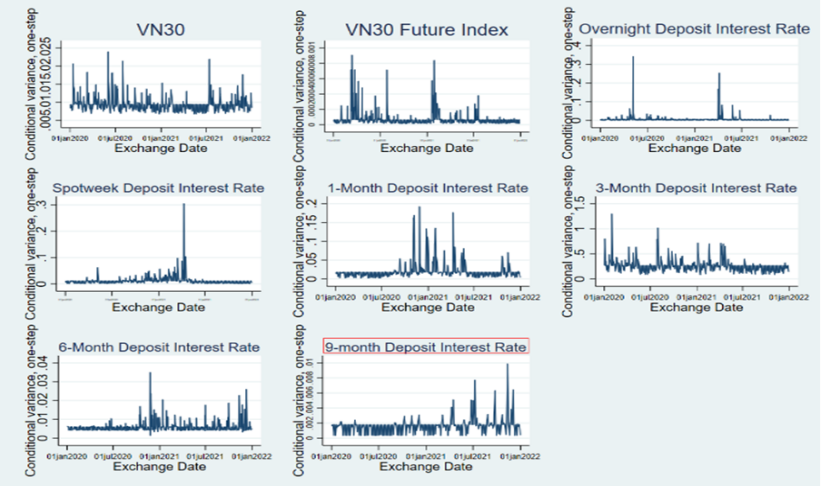

Figure 2. Market Volatility (Covid term)

**Source: Author's Elaboration*

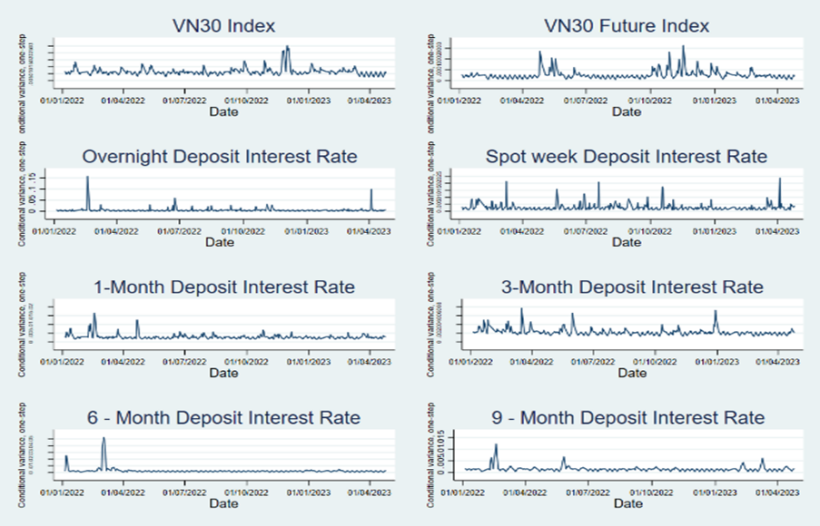

Figure 3. Market Volatility (2022 - 04.2023)

**Source: Author's Elaboration*

It is understandable as this is the underlying market and is affected by its consisting sector – top 30 Vietnamese listed companies with the largest market capitalization. In addition, under the Covid-19 term, the future market seems to fluctuate a lot compared to the entire period. The reason behind this volatility can be explained that people accept to take risk for a high premium when other instruments (the deposit interest rate) are continuously nailed down and all other activity is locked down since the half of 2021.

3.2. The Relationship between Spot market, Future Markets, and deposit interest rate:

3.2.1. Variance Decomposition:

The variance decomposition is employed in explaining the impact of one variable on other variables and analyzing the relationship between the two markets: The futures market and its underlying market and comparing the volatility with the effect of the depositing interest rate.

For the entire period, the change of VN30 seems less likely to be explained by other variables in the impulse while the percentage of variation in the futures market explained by its underlying market of 92 percent. The results in Table 9 and Table 10 show a less likely effect of deposit interest rate on the derivatives and spot market.The granger causality test which was mentioned above also clearly stated the causality of deposit interest rate and the two markets. On the other hand, from the result, the overnight rate can explain the change in both VN30 future index and VN30 index at the highest proportion (approximately 0.7 percent) compared to other types of deposit interest rate including spot week rate, one month rate, six-month and nine-month rate.

Table 9

Volatility in 2022 - 4.2023

Variance Equation	RVN30	RVN30F	Reamrate	Resw	Reonrate	Re3mrate	Resixmrate	Reninmrate
ARCH (α)	0.107	0.300***	0.257***	0.732***	1.247***	0.165*	.222***	.0816***
	-0.0733	-0.0724	-0.0836	-0.106	-0.103	-0.0885	-0.0523	-0.029
GARCH (β)	0.874*	0.779***	0.481*	0.0182	-0.0555**	0.710**	0.943***	1.345***
	-0.47	-0.0969	-0.286	-0.0578	-0.025	-0.325	-0.1	-0.113
Constant	0.000273	-0.00000363	0.000723	0.000977***	0.00132***	0.00027	-0.000542***	-0.000732
	-0.00485	-0.00000276	-0.000681	-0.000182	-0.000102	-0.000619	-0.000184	-0.000152
(α + β)	0.981	1.079	0.738	0.7502	1.1915	0.875	1.165	1.4266
Standard errors in parentheses								
*** p<0.1, ** p<0.05, *** p<0.01**								

**Source: Author's Elaboration*

Table 10

Variance Decomposition (Response VN30 Future) - Entire Period

Impulse (VN30, Onrate, Spot Week Rate, Onemrate, Sixmrate, Ninemrate)						
Step	***VN30***	***Spot Week Rate***	***Onrate***	***Onemrate***	***Sixmrate***	***Ninemrate***
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	*0.788821*	***0.00033***	0.000011	0.003095	9.30E-06	0.000167

3	*0.821123*	0.000233	0.000034	0.002308	0.000053	0.000217
4	0.848113	0.000299	0.000077	0.002511	0.000088	0.000232
5	0.867071	0.000642	0.000074	0.002412	0.000098	0.000248
6	0.881784	0.001251	0.000064	0.002588	0.000097	0.000248
7	0.893042	0.002073	0.000064	0.002759	0.000089	0.000248
8	0.901826	0.00306	0.000093	0.003018	0.000081	0.000243
9	0.908702	0.004164	0.000164	0.003288	0.000072	0.000238
10	0.914109	0.00535	0.000284	0.003576	0.000066	0.000232
11	0.918364	0.006591	0.000455	0.003858	0.000061	0.000225
12	0.921706	0.007864	0.000679	0.004131	0.000058	0.000219

**Source: Author's Elaboration*

Table 11
Variance Decomposition (Response VN30) - entire period

Impulse (Vn30fcp, Onrate, Spot Week Rate, Onemrate, Sixmrate, Ninemrate)						
Step	***Vn30fcp***	***Onrate***	***Spot Week Rate***	***Onemrate***	***Sixmrate***	***Ninemrate***
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	*0.00306*	*0.000088*	0.000185	0.000938	0.000203	0.000083
3	*0.002747*	0.000064	0.000295	0.001599	0.000333	0.000086
4	0.003	0.000242	0.000402	0.001996	0.000403	0.000089
5	0.002965	0.000663	0.000435	0.00245	0.000449	0.000093
6	0.002982	0.001297	0.000412	0.002844	0.000473	0.000097
7	0.002951	0.002089	0.000365	0.003251	0.000484	0.000101
8	0.002923	0.003	0.00032	0.003631	0.000486	0.000106
9	0.002887	0.003996	0.000298	0.003995	0.000482	0.000111
10	0.00285	0.005053	0.000312	0.004333	0.000474	0.000116
11	0.002814	0.006154	0.000372	0.004644	0.000464	0.00012
12	0.00278	0.007284	0.00048	0.004926	0.000452	0.000125

**Source: Author's Elaboration*

Briefly, the deposit interest rate is not able to explain more than 1 to 5 percent change in both spot and derivatives market. However, in Covid-19, the proportion of explanation by 1-month deposit interest rate and 6-month deposit interest rate about the variances of the two markets is nearly up to 3 percent. Moreover, in the period of 2022 – now, the variance of VN30 index and VN30 Future Index can be explained approximately 2 percent by mostly deposit interest rate variable. For example, the spot week rate could explain the volatility of VN30 about 2.4 percent and explain the volatility of VN30 Future Index about 2.7 percent (Table 11-15).

Table 12
Variance Decomposition (Response VN30) - Covid term

Impulse (Vn30fcp, Onrate, Spot Week Rate, Onemrate, Sixmrate, Ninemrate)						
Step	***Vn30fcp***	***Spot Week Rate***	***Onrate***	***Onemrate***	***Sixmrate***	***Ninemrate***
0	0	0	0	0	0	0
1	0	*0*	0	0	0	0
2	*0.04185*	0.002145	0.005478	0.000314	0.005075	0.004289
3	0.043062	0.003025	0.009316	0.000382	0.009889	0.008155
4	0.044768	0.003988	0.009642	0.000534	0.01064	0.008593
5	0.044777	0.003982	0.009826	0.000697	0.011791	0.008844
6	0.044962	0.004001	0.009898	0.001289	0.011954	0.009198
7	0.044946	0.004011	0.010044	0.001351	0.012003	0.009282
8	0.044966	0.004044	0.010102	0.001506	0.012015	0.009446
9	0.044959	0.004073	0.010189	0.001536	0.012012	0.009513
10	0.044964	0.004105	0.010251	0.001584	0.012013	0.009594
11	0.04496	0.004134	0.010322	0.001603	0.012013	0.009642
12	0.04496	0.004163	0.010383	0.001622	0.012014	0.009688

**Source: Author's Elaboration*

By the way, the results of these functions indicate the evidence of causality running from VN30 index (spot market) and VN30 future index (the futures market). For the proportion of

explanation by deposit interest rate, the granger test may be misleading due to lacking in economic significance.

Table 13
Variance Decomposition (Response VN30 Future) - Covid Term

Impulse (VN30, Onrate, Spot Week Rate, Onemrate, Sixmrate, Ninemrate)						
Step	***VN30***	***Spot Week Rate***	***Onrate***	***Onemrate***	***Sixmrate***	***Ninemrate***
0	0	0	0	0	0	0
1	0.828055	0	0	0	0	0
2	0.802157	0.005418	0.023035	0.000079	0.007649	0.00004
3	0.791944	0.006072	0.022928	0.000412	0.01589	0.001251
4	0.78553	0.006359	0.022881	0.001779	0.017357	0.002694
5	0.784256	0.006348	0.023387	0.001797	0.018289	0.002802
6	0.782647	0.006363	0.023403	0.00256	0.018502	0.003385
7	0.782354	0.006382	0.023601	0.00259	0.018516	0.003481
8	0.781854	0.006424	0.023654	0.002772	0.018534	0.003725
9	0.781629	0.00646	0.023767	0.002803	0.018531	0.00382
10	0.781364	0.006501	0.023838	0.002864	0.018535	0.003941
11	0.781175	0.006537	0.023926	0.00289	0.018538	0.004014
12	0.780995	0.006573	0.023998	0.002918	0.018541	0.00408

**Source: Author's Elaboration*

Table 14
Variance Decomposition (Response VN30) - (2022 - 4.2023)

Impulse (Vn30fcp, Onrate, Spot Week Rate, Onemrate, Sixmrate, Ninemrate)						
Step	***Vn30fcp***	***Spot Week Rate***	***Onrate***	***Onemrate***	***Sixmrate***	***Ninemrate***
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	***0.022372***	***0.000114***	0.007295	0.000699	0.000109	0.002746
3	*0.020533*	0.001301	0.009072	0.00373	0.000074	0.004043
4	0.018663	0.003262	0.009706	0.004364	0.000241	0.00577
5	0.017402	0.005395	0.010589	0.005513	0.000358	0.007056
6	0.016378	0.007883	0.011128	0.00679	0.000402	0.008427
7	0.01555	0.010526	0.011541	0.00805	0.000416	0.009687
8	0.01487	0.013283	0.011849	0.009266	0.000407	0.010896
9	0.014302	0.016111	0.012067	0.010398	0.000384	0.012049
10	0.013817	0.018983	0.012204	0.011433	0.000357	0.013153
11	0.0134	0.021878	0.012267	0.012365	0.000328	0.014211
12	0.013036	0.024781	0.012263	0.013194	0.000303	0.015227

**Source: Author's Elaboration*

Table 15
Variance Decomposition (Response VN30 Future) - (2022 - 04.2023)

Impulse (VN30, Onrate, Spot Week Rate, Onemrate, Sixmrate, Ninemrate)						
Step	***VN30***	***Spot Week Rate***	***Onrate***	***Onemrate***	***Sixmrate***	***Ninemrate***
0	0	0	0	0	0	0
1	0.890985	0	0	0	0	0
2	*0.882305*	0.000298	0.005915	0.006377	6.40E-06	0.001834
3	0.896569	0.002394	0.006138	0.00683	0.000569	0.004119
4	0.9042	0.004615	0.007243	0.006974	0.001638	0.005684
5	0.907201	0.007191	0.008245	0.008071	0.002095	0.007184
6	0.907838	0.009978	0.009037	0.009387	0.002275	0.008559
7	0.907023	0.012832	0.009747	0.010773	0.002294	0.009799
8	0.905316	0.015717	0.010361	0.012119	0.002221	0.010951
9	0.90309	0.018602	0.010873	0.013367	0.002105	0.012029
10	0.900573	0.021469	0.011279	0.01449	0.001971	0.013049
11	0.897906	0.024307	0.011579	0.015483	0.001836	0.014022
12	0.895176	0.027111	0.011779	0.016347	0.001708	0.014954

**Source: Author's Elaboration*

Briefly, the impact of the spot market on the futures market has been confirmed strongly through the forecast error variance decomposition results in both entire period and sub-period while the futures market volatility suggest a slight impact that can be explained by this variable on the spot market. On the other hand, all types of deposit interest rates make a slight contribution to explaining the variance of the two markets.

3.2.2. Impulse Response Analysis:

After the variance decomposition analysis, the orthogonal impulse and response functions are applied next with the use of orthogonalized Impulse response functions for each market. (Sims, 1980) made suggestion about the application of these functions while analyzing the relationship and avoiding the misleading error may happen due to the lack of economic significance when only VAR model or the Granger Causality test are employed. The magnitude of the shock which is simulated by the OIRF graph corresponds to one-unit standard deviation.

The Impulse and Response function is used to analyze the impact of change in the spot market on derivatives market and vice versa. The other variables (deposit interest rate) are involved to observe the proportion of volatility on the two markets. The graphs are shown in Figure 4, 5.

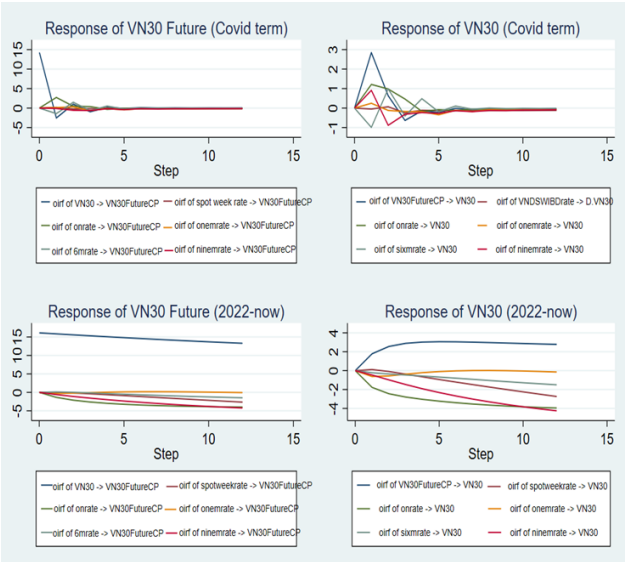

Figure 4. OIRF Covid term (2020 - 2021) and Geopolitics Event (2022 - 04.2023)

**Source: Author's Elaboration*

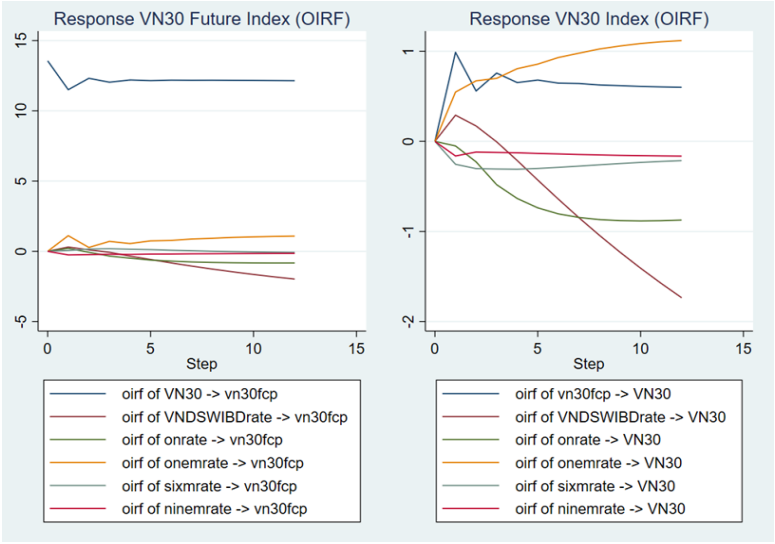

Figure 5. OIRF for Entire Period

**Source: Author's Elaboration*

For entire period, with one standard deviation of the future market and the spot week as well as one month deposit interest rate, in the first step (day lags), there is an increase in VN30 as the

response to the change while for the rest, the slight decrease of VN30 index is illustrated on the graph. In addition, the change in the four rates including the spot week, overnight, 6 – month, 9 – month deposit interest rates, in the next steps till the end stage, reflects a sharp decline and even negative reaction of the spot market. On contrast, the positive response, and a stable trend of VN30 index has been illustrated with the impulse of the future market and the one-month deposit interest rate on the graph after 5-day lags. On the other hand, for the response of VN30 future index, in very first step, the change in the spot market reflects a fall of the future market and a slight increase again in the next steps, then the stable trend is maintained till the end of stage. Additionally, except the 1-month deposit interest rate, the impulse from other deposit interest rate causes negative response of the future market.

When analyzing the volatility of the two markets under the sub-period (GHC, Ukraine invasion), the graphs look a lot more interesting. In the begin day lag in the Covid-19 term, the shock from the spot market causes a sharp decline of the future market while a significant increase in VN30 index is recorded as the response to the shock from the future market. However, in this period, after the fifth day lag, the response remains steady. In the Ukraine invasion (2022 – present), except a slight increase of VN30 index as the response to the change in VN30 future and then remaining the stable trend, both two markets have negative response to the change in deposit interest rate.

The results of the OIRF (orthogonal impulse – response function) confirm once more time the findings of Granger causality and the variance decomposition analysis above. The OIRF delivers confirmation on the negative impact of the deposit interest rate volatility on the two markets and a strong effect from each market on each other.

From all analysis, through established result, the hypothesis that there is negative correlation among the spot market, futures market and the deposit rate was accepted. On the other hand, the hypothesis *H1* which is about the positive correlation among the spot, future market and the deposit interest rate was rejected as the correlation among these three variables were revealed through VAR model and the relevant tests.

Discussion

The study investigates not only the impact of the spot market on the derivatives and vice versa, but also their volatility effects when the period is separated following the two great events that cause effects on the whole financial market. The results showed that the shock influences both markets and confirmed the hypothesis about the negative correlation between the spot as well as the future market and the deposit interest rate. Additionally, with GARCH model, the volatility of these two markets is also presented clearly and how they fluctuate during the Covid-19 and the Ukraine war term. Moreover, the findings by GARCH model in this study is like (Ho Thuy Tien et al., 2017; Nguyen Thi Hien et al., 2022) about the long – term impact on volatility by shock of the underlying market and the future market. The study of (Ray Yeutien Chou, 1988) also supports the result found by GARCH.

On the other hand, by using VAR model, Granger Causality and then applying variance decomposition, and impulse response functions, the relationship between the spot and the future market suggests that the volatility of the trading on future market causes spot price volatility and even the rise of spot price volatility. In terms of deposit interest rate, the findings show a weak causal relationship with both VN30 Index and VN30 Future Index. The observation of negative shock from deposit interest rate which is found in this research is like Muktadir-al-Mukit, 2013; Shahnaz Mashayekh et al., 2011.

Conclusion

The study's results recommend the investors to pay attention to an effective risk management strategy as the fluctuation is demonstrated as being affected by the volatility in the past. The flexible allocation of investment is also necessary to take benefit of the market capabilities, as a rise in interest rate may lead to the fall of the stock market. Moreover, the results implied that the investor could take advantage of historical volatility in conducting market research

as well as the forecast to minimize the portfolio risk and have a well – preparation before potential risk due to "black swan" events. In other words, the study encourages investors to monitor the risk exposure in both markets closely to update the insight of self – investment. As the positive correlation between the two markets implies that changes in one market are likely to influence the other. Therefore, this could be applied to build reasonable trading strategies. For example, hedging actions can be considered or taken when the investors receive any signals showing that their portfolio may suffer loss from the spot market. Other than that, the negative correlation between the two markets and the deposit interest rate implied a flexible investment is essential in building wealth, or reasonable investing strategies. However, the readers who are interested in investing also need to read the limitations of the study to consider their understanding, and their trading strategies. Those above recommendations are for reference rather than following absolutely.

As mentioned above, the study conducted while there are rare previous papers, limitations are unavoidable. In this research, due to the lack of data publications, the result of the research is validity from august 2018 rather than august 2017 – the birth of VN30 future. Moreover, the research aims to provide an overview of the correlation among three variables instead of a detailed insight rather than a detailed view. Because the relationship between deposit interest rate and the stock markets are assessed as a complex relationship in the literature review session due to the impacts from other macroeconomic factors. The time range (2018–2023) is appropriate for studying both three variables. Additionally, the study also revealed just one aspect of common investors behavior rather than the whole. In particular, the investor behavior tends to what they beneficiary such as higher interest rate, or lower risk but stable return, etc. As financial markets are complex and subject to various inefficiencies, investing decisions can be rational or irrational. The research test which has been demonstrated in the table of descriptive statistics also confirmed that the market distribution did not follow any regulations. Additionally, the scope of the study is in Vietnamese markets, so it could restrict the generalizability of the findings.

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INTELLECTUAL CAPITAL AND THE TRANSPORT SECTORS: IS THERE ANYTHING NEW?

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Abstract. *The main purpose of this research is to find out if, in the (scarce) relevant literature, a literature review, which relates the intellectual capital and the transport sectors, in general, there is something new in common that relates the 2 topics. The transport sectors, always but, today, more than in the past, is extremely important, both for the mobility of citizens on a daily basis and for the purpose of transporting goods. That is, directly and/or indirectly, it is pertinent. The interference of intellectual capital, on the transport sectors, potential and, in effective terms (in reality), can be important to enhance the sectors. In the selected literature, due to its scarcity and lack of substance, with a scientific contribution, what was obtained, proved to be practically null. One of the explanations that may be in the base is the lack of information that can be worked on, based on primary data. These enable, in terms of potential, public policy decision-makers, more solid and far-reaching contributions. This, today, the year 2023, is something that is still waiting and if it is not based on the public entities themselves, the waiting time will be even longer.*

Keywords: *Intellectual Capital, Transport Sectors, Skills, Performance, Technology, Innovation, Competitive Advantages*.

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Introduction

In the field of intellectual capital, from the outset, the relevant literature refers to a variety of definitions, ways to measure and calculate its value, in such a way that it makes it unclear and, above all, prevents further developments that have this basis. well defined and accepted in the context of the scientific community (Berzkalne and Zelgalve (2014), Gogan and Draghici (2013), Yildiz et al. (2014), and Sekhar et al. (2015)).

This is one of the main obstacles that affects the entire subsequent literature and its review, without forgetting the expansion of scientific knowledge in the area and related to it: performance, competitive advantages, well-being, innovation. plus the relevant literature has dealt with: (Abdullah and Sofian (2012), Bhatti and Zaheer (2014), Chu et al. (2011) and Delgado-Verde et al. (2016)).

Thus, it is immediately evident that the literature on the intellectual capital has this gap, which constitutes an obstacle that, even today, does not have a single, clarifying answer and solution, which is accepted by most researchers.

In the case of the transport sectors, it is of some interest to know if there is specific literature relating the intellectual capital with it, and if it is abundant or scarce, which it says, which it emphasizes as being more important in the field, and what insights it moves towards future developments. It should be noted that one of the main interests is to know what new contributions to the intellectual capital versus the transport sectors, are offering.

This sector, as referred Idrus and Hartati (2020), is one of those that has as an important pillar, the fact that it is decisive for transporting people and goods and, that is, for its effects in the field of mobility (by land, sea and air) and what they relate to (indirect effects but no less important). Hence, it is, scientifically, important in conjunction with the intellectual capital, because this is at the base in whatever form it is. Can it, provide contributions for the resolution or mitigation of those?

The fundamental problem is to know if there is enough literature, to know a little about the possible relationships between the 2.

In a first analysis, the answer is no: it is limited to Zemlyak et al. (2022), Idrus and Hartati (2020), Igielski (2018), Gottwald et al. (2017) and Ciziunienė et al. (2016).

However, it underlines the particularity of, at least, if it is observed that it is recent: years 2022, 2020, 2018, 2017 and 2016, respectively.

The question arises, as the most important one, is to assess, in terms of research question, what the 5 research papers on the subject say, in this case: intellectual capital and the transport sector. Do they bring something new, in the substance (content) about the form (the topic(s)) related to the mentioned pair?

The answer to this, constitutes the contribution of this research to, at least, as a suggestion, know what the relevant literature is based on a review, based on the profound scarcity of papers.

This paper is divided into 3 Sections: Introduction, in which a brief introduction to the topic in question is made; a Literature Review, which is limited to 5 papers, the little that exist on the subject; finally, the Conclusions, which consist of the main features on the subject, not forgetting some References that supported the paper (on the subject and beyond).

Literature Review

Zemlyak et al. (2022), prepared a paper whose main purpose is to research intellectual capital as a driver of technological innovation, in the context of the so-called, by the authors, industrial revolution in the transport activity sectors in the Russian Federation. It is underlined by the authors that the paper is inserted in the recent technological evolution, along with its importance for the economy and hence the need to know, both the progress achieved and the ability to absorb the effects of the intellectual capital over the technologic innovation.

The sample, consisting of 455 respondents, was based on an approach with primary data, for which a structured closed-ended questionnaire was constructed. These belonged to companies specialized in transport services in the country. The companies were different because they had also different technological levels. Specifically, with regard to respondents, in companies, they were, general managers, marketing managers, production managers and workers who worked in executive offices, R&D offices, among others who held important functions.

The questionnaire had 2 sections: a section with socio-demographic questions (age, educational qualifications, professional experience) and others related to constructed indicators (constructs) for the study. With regard to age, 122 respondents were between 21 and 30 years old, 203 were between 31 and 40 years old, 86 were between 41 and 50 years old and 44 were over 50 years old. secondary and lower, 89 respondents, college, 170, graduates, 124, and more than graduates, 72. Finally, with regard to years of experience, between 1 and 2 years, 106, between 3 and 5 years, 96, between 5 and 10 years, 124 and more than 10 years, 129.

The aforementioned questionnaire was answered online on Google, via a spreadsheet, which was shared by the sample of 455 respondents.

As main conclusions, Zemlyak et al. (2022) found that, companies in the Russian Federation, adopt technological innovations within a broad spectrum of knowledge. Intellectual capital is confirmed as having a key role in this context, and which translates into specialized knowledge, skills and other qualifications that, in companies, constitute assets related to technological innovations. On the other hand, the qualifications of companies to internalize new knowledge, constitute the factor that determines the effectiveness and pace of the same technological innovations.

With regard to the limitations (and future avenues) of the paper, one refers to the fact that it is limited to the transport activity sectors, which limits generalizations. Another refers to the fact that the capacity to absorb technological innovations plays an important role but, this, did not result in evidence in the paper. Finally, the consideration of different activity sectors, as it was not taken into account, constitute an obstacle to comparisons.

Results

Idrus and Hartati (2020), in their research, these 2 authors researched the relevance of the value of intellectual capital in the performance of companies in the transport activity sectors. Other previous studies carried out research on the possible relations between the intellectual capital and financial performance or market value, in the same activity sector, and arrived at different results from those found by these 2 authors. It should be noted that this has been occurring as the intellectual capital began to surpass physical assets as being the most important, in business assets. The same occurs in the transports activity sector, specifically. These activity sectors have a very pronounced influence on economic and social activities. Thus, it is important to know the effects of different measures of intellectual capital on company performance.

The authors used companies listed on the Indonesia Stock Exchange, from 2011 to 2015. With regard to the method used, the research focused on 35 companies in the transport activity sectors in Indonesia, using secondary data from their Financial Statements. On the other hand, they also resorted to primary data that materialized in in-depth guided interviews. In the quantitative approach, the authors used secondary data, and in the qualitative approach, primary data. A total of 21 people were questioned, such as managers, drivers, pilots and regulators. The authors tested 8 hypotheses using multivariate linear regression analysis. As independent variables, they used, VACA (Value Added Capital Employed), VAHU (Value Added Human Capital) and STVA (Structural Capital Value Added) were used as proxies of intellectual capital that was measured via VAICTM by Pulic (1998). The dependent variables used, were ROA (Return on Assets), ROE (Return on Equity), both as proxies of business performance. In terms of final conclusions, the authors demonstrated that VACA, VAHU and STVA did not affect ROA and ROE as proxies of business performance. However, the VAICTM that combined VACA and VAHU and STVA positively affected both ROA and ROE.

Igielski (2018), focuses on the role of intellectual capital in the construction of competitive advantages in the case of transport, shipping and logistics companies located in the Baltic Sea Region. Additionally, the author made an attempt to assess the management of intellectual capital in Polish companies, identifying the conditions that accompany this process.

The basis of the research is an analysis of theoretical materials that were carried out by the author in 2017, encompassing 100 companies, within the scope of an empirical analysis.

From the standpoint of methodology, the research followed a survey that used individual interviews with managers and boards of directors, from 100 companies involving 300 managers and workers in total. The sample was random. On average, each company had between 50 and 249 employees. Only 63 companies used the concept of intellectual capital management. The author found that the companies that employed the most workers were also those that most applied the concept, which was somewhat contrary to what was expected because its implementation and management did not require very complex structures. It should also be mentioned that, in small companies, they were also those in which, due to requiring small structures, the concept was easier to apply, having required less experience. As the main conclusions drawn by the author, the fact that the intellectual capital constitutes a combination and a joint action of all intangible assets that a company owns or is in a position to create using knowledge, is highlighted. The most important thing was to use the potential to be better than the competition. The companies that showed greater effort in these resources revealed that they had the main market precisely in the assets that used these resources. This is important, insofar as companies today work largely on the basis of flexibility and adaptation to change in the environment.

Thus, companies that have built competitive advantages, need to adjust their internal operations to changing external conditions. What is more underlined in the activity sectors, which develop in a dynamic way, as is the case of the transport sectors. In these sectors, for companies to grow, each one has to strive to manage optimally. If these companies plan to increase their efficiency, they must use contemporary forms of management that are used to implement and achieve certain results. Every company should start to see the intellectual capital as the most important factor at the micro and macro level, without which it is not possible to reach a level of innovation. Finally, it is noteworthy that there are dilemmas faced by companies, such as the type of influences from the development of intellectual capital, and the conditions to sustain them afterwards. Recent years have shown, concludes the author, that the concept of intellectual capital has become a management option that has repercussions on the position of companies in the markets, in general.

Gottwald et al. (2017), carry out a sui generis approach, which can be summarized as follows: how can human capital work as a forecasting tool in order to know, in advance, the development of the transport and telecommunications sectors, within the scope of a perspective applied to the context of the Czech Republic, in 2016?

Indeed, the authors state that human capital has gained increasing importance, which translates into the greater number of research studies that highlight human capital as the key in areas that are of utmost importance for development. of countries and companies. On the other hand, it is in the field of education that human capital has the greatest impact.

As the main methodology used by the authors to carry out the research, the starting point was the Department of Transports Management, Marketing and Logistics at the University of Pardubice. A questionnaire was used, conducted among students of high schools, which offered curricular programs related to transport and communications sectors and, at the same time, were associated with the IT, Telecommunications, Postal Services and Logistics High School Association, with the ultimate purpose identify trends in human capital, inserted in the transport sectors.

It is an analysis that has its starting point in 2 identified factors:

• The student´s first intention, that is, looking for a job or extending their studies;

• Students' gender (male or female) about their future. In this context, students were asked in 2 main areas: perceived employability and selected motivational factors, in order to convey an idea about their professional future (first area) and also provide an idea about whether they consider the knowledge and experience held enough for success in the job market (second area);

The questionnaire, carried out on Google Forms, was administered in 2016 to a group of 95 high school students (sample size) aged, approximately, 18 years old. The sample period began on April 4 and ended on April 22, 2016.

With regard to the results obtained, it should be noted that, with regard to perceived employability, they were differentiated according to the students' first intention (looking for a job or continuing to study) and gender.

As the most evident conclusions obtained, it should be noted that a dependence was demonstrated between the first intention of the students, and their differentiation, by gender and by perceived employability and motivation factors. In the case of continuing to study, the difference in answers was higher compared to the case of looking for a job. The paper brought insights into the approach of human capital in the transport and communications sectors.

Avenues for future developments emerged. Thus, one of the topics would be to carry out the study from the perspective of functional relationships and motivational factors, where supposedly, differences by gender would be blurred.

The main contribution of this research was that, in 2016, it constituted the first, based on primary data and, on the other hand, it was the first to be carried out in the Czech Republic.

Ciziunienė et al. (2016) carried out research on the skills of human resources in the transport sectors, specifically through a case study in Lithuania.

The authors begin to assert, right away, that the ultimate goal of any company, is to obtain the greatest profit, the largest market share, and for that, the starting base, are the human resources (intellectual capital). To this end, they emphasize the importance of acquiring skills by them, to be more qualified to perform various functions within companies. In this way, the management of human resources is one of the most important processes, being a sine qua non condition for achieving several goals. When human resources become an active part within the system, then, according to Ciziunienė et al. (2016), these determine the efficiency of activities carried out in business contexts.

In the specific paper, the expression "human resources" and "human capital" are commonly referred to as the latter being more used by economists, while the former is more used in the field of management science.

On the other hand, several benefits are also mentioned due to the fact that investing in human capital is one of the (pre)requisites for it to produce, being developed by market forces. Thus, its development, depends on the investment made in it.

In the case of Lithuania, the weight of the transport sectors amounts to 12% of GDP despite the fact that only 5% of the workforce is active in it. Thus, the transport sectors are the key sectors of the economy and in constant development. The growth in sales in these sectors comes from the growth in demand. According to the data of 2013, from the source of the Department of Statistics of Lithuania, companies in the transport sectors, belong to the one in which the indicators are constantly improving.

Thus, the most important conclusions drawn by the authors are that, human capital is the most important resource of the Lithuanian economy. It is even more important than natural resources and material assets, since satisfying demand is the most important factor in social progress. This is so, because it creates value for companies. Workers are understood not in terms of workforce, but in terms of human capital with accumulated knowledge.

Human resources and their management in companies are, particularly, important in creating value, with the knowledge accumulated during formal education and accumulated experience. Their management and the skills acquired reflect their linkage to achieving companies´ goals. The solutions devised by the management of human resources make it possible to design qualifications for these. It should also be noted that, research consulted by the authors, shows that workers in the transport sectors understand that, value has their skills and the benefits withdrawn to improve professional performance. Having skills to apply knowledge obtained, was understood translated in terms of wage earned.

As future research, the authors state that the requirements for human resources in the transport sectors are increasing qualitatively and not just quantitatively. What will translate into a higher wage, in proportional terms, that is, if the required skills were higher (lower), it will increase (decrease) the concomitant wage.

Conclusion

The main goal of this paper (research) is to know whether, in the relationship between the intellectual capital and the transport sectors, in general, there is any new evidence that highlights anything that proves to be relevant. In other research that relates other topics such as in (Gogan et al. (2016), Hashim et al. (2015) and Kalkan et al. (2014)), namely, the conclusions to be drawn are much more fruitful and, nevertheless, the basic obstacle, alluded to in the introduction, has more substance.

Nothing new is evidenced in this literature review that it is scarce by nature (not only due to a selection effort, attributable to researcher). On the contrary, it is noted that this literature review adopts an approach in which, although the transport sectors topic is present, with regard to intellectual capital, it is completely absent.

Thus, in its replacement, appear expressions such as human resources and human capital. This evidences a basic conceptual definition, disparate and, therefore, prevents a measurement, let alone the concrete value of the intellectual capital inserted in the transport sectors.

The range of expressions and scientific approaches is, in addition to being rare, not very enlightening about the existence of something new between the 2 topics.

It would be expected that there would be quantitative approaches, which would allow transmitting an idea about the value of the transport sectors evaluated by the intellectual capital that it contains. Furthermore, certain relationships that intellectual capital = human resources, have in the transport sectors, namely, for the creation of value (!), combined with the experience held by them, in the case of Lithuania, are not enlightening.

In the case of Zemlyak et al. (2022), we want to know the relationship between intellectual capital as a driver of technological innovation, in the context of the transport revolution that took place in the Russian Federation. The methodological approach is based on the questionnaire and, astonishingly, the respondents in the sample, answered online via Google!. What is the scientific rigor present here? Did the respondents answer or did they ask someone to answer for them? It is a possibility that is not ruled out and, therefore, can make the research prepared by the authors completely unusable.

Idrus and Hartati (2020), they studied the possible relationships between intellectual capital and performance in the transport sectors, in Indonesia. They concluded that intellectual capital (measured by ROA and ROE) is influenced, with positive impacts, by the value added of capital employed, together with intellectual capital, and by human capital and structural capital.

Regarding Igielski (2018), in Poland, to efficiently manage the transport sectors, the essential focus lies in using modern management methods that allow this. Which appeals to intellectual capital, which in turn enables innovation.

Gottwald et al. (2017), address the question of how human capital works as an early predictor of the development of the transport (and telecommunications) sectors in Czech Republic. The underlying sample focused on High School students in this area. Predictability proved to be related to perceived employability, looking for a job or continuing to study and gender.

Finally, Ciziunienė et al. (2016), in Lithuania, related human resources to transport sectors. Those are the most important, as they are a factor of social progress and the creation of corporate value.

Some relevant and new points can be highlighted in the paper, generically:

1. The relations between intellectual capital and the transport sectors do not appear, individualized, as if they were a pair, but rather, related to other topics such as technological innovation, business performance, processes of management of intellectual capital that result in innovation, how human resources function as a predictor of the development of the transport sectors, finally, human resources are factors of social progress and value creation;

2. A non-negligible number of times, expressions other than intellectual capital are referred to, which makes it difficult to select papers that bring together the 2 topics;

3. On the other hand, there is no clear distinction between the transport sectors, by land, by sea and, above all, by air. This, perhaps, is the most important finding, because each type has a different weight and importance in economy. Nothing distinct appears, much less related to intellectual capital;

Regarding to the research question, it was whether the intellectual capital and the transport sector: Do they bring something new, in the substance (content) about the form (the topic(s)) related to the mentioned pair?

Without exception, no other conclusion can be drawn, other than that the papers do not bring anything new, especially useful (see point 2 above), and raise doubts regarding the validity and scientific rigor embodied in them. Thus, regarding the research question: West or East or anywhere between these two extremes, nothing new, neither near nor far.

As main implications, it should be noted that this dual topic is one of the most scarce in terms of scientific work, published by researchers, until now: 2022 and 2016. Therefore, it is not possible to find ideas with potential to expand scientific knowledge, inside and outside the topics, and even less, answers or solutions to problems posed in the papers. The transport sectors are extremely important in economies, but in terms of research it is little or not studied at all.

In the limitations, it can be mentioned, the lack of suitable study, the approaches, do not clearly separate the land, sea and air transport sectors. On the other hand, they do not list the intellectual capital embedded in them (especially in air subsector). For practical application and, following many other topics, they took the intellectual capital as static (instead of dynamic) and as a state not a process.

As future avenues of research, there are studies applied to the most important geographic areas, which will be those where land, sea or air, is more intense and problematic: China, Germany, India, among others. It should also be noted that an obstacle is always faced, translated into very limited information (primary data), but which, for this reason, constitutes a challenge for researchers to overcome and obtain more orange juice.

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ANALYSIS OF THE POVERTY LEVEL AND HUMAN DEVELOPMENT INDEX IN CENTRAL JAVA FOR THE 2016-2021 PERIOD

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Abstract. *This study aims to analyze the influence of the Open Unemployment Rate, Gross Regional Domestic Product, Investment, and Poverty variables on the development of the Human Development Index. This study used a quantitative method involving. The population of this study was related to the Human Development Index in Central Java Province recorded by Statistics Indonesia (BPS). This study used panel data from 29 districts and 6 cities in Central Java Province. The data were taken from the Central Java Statistics Agency from 2016 to 2021. The variables used for the study were the Human Development Index, Open Unemployment Rate, Domestic Investment, Gross Regional Domestic Product, and Poverty. The results of the study showed that the open unemployment rate and the Gross Regional Domestic Product variables had a significant effect on the Human Development Index. Meanwhile, both the Investment and Poverty variables had a significant negative effect on the Human Development Index.*

Keywords: *Human Development Index, Open Unemployment Rate, Investment, Gross Regional Domestic Product, Poverty.*

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Introduction

The Human Development Index (HDI) was first initiated and proposed in the 1990 Human Development Report by the United Nations Development Program (UNDP). This report was prepared by a Pakistani economist, Dr. Mahbub ul Haq, with the collaboration of other economic and social experts, including Amartya Sen, an Indian economist, and philosopher winning the Nobel Prize for Economics (Quinn, 2017). The human development index can be measured by 3 (three) basic dimensions: a long and healthy life, being knowledgeable, and having a decent standard of living. In its development, the Human Development Index changed to adjust the indicators that are no longer appropriate such as literacy rate and gross income per capita. Besides indicators, the arithmetic average formula used is also changed. The new indicators used are the average length of schooling and the expected years of schooling to replace literacy rates, while Gross National Income is to replace Gross Domestic Income (BPS Indonesia, 2021).

Administratively, Central Java Province is divided into 29 districts and 6 cities. The picture of human development varies according to the number, of economic, social, and cultural diversity in the region. One important indicator of successful development is the human development index represented by health, education, and economy. The data below illustrate the development of the human development index score for Central Java Province compared to 5 other provinces on Java Island.

Table 1 shows that the Human Development Index for Central Java Province has increased in the last three years. Central Java has a smaller HDI than DKI Jakarta and DI Yogyakarta. Meanwhile, East Java has the lowest DHI.

Table 1
Human Development Index by Province on Java Island

Number	Province	Year			
		2020	2021	2022	Rank
1.	DKI Jakarta	80,77	81,11	81,65	1
2.	Central Java	71,87	72,16	72,79	5
3.	West Java	72,09	72,45	73,72	3
4.	East Java	71,71	72,14	72,75	6
5.	Banten	72,45	72,72	73,32	4
6.	DI Yogyakarta	79,97	80,22	80,64	2

Source: (BPS-Statistics Indonesia, 2021)

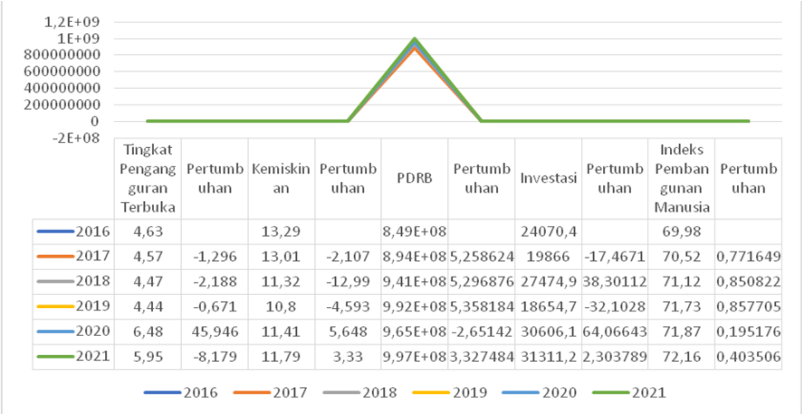

Figure 1. Human Development Index in Indonesia

Source: (BPS-Statistics Indonesia, 2021)

Figure 1 shows the increase in the open unemployment rate, poverty, and investment with the high growth in 2020. Meanwhile, GRDP has decreased and the HDI shows positive growth. The poverty rate in Indonesia increased significantly in 2020. Referring to Statistics Indonesia, the poverty rate reached 9.78 percent or around 27.55 million people live below the poverty line in March 2020. This rate is higher than that in September 2019 with 9.22 percent or around 25.95 million people living below the poverty line.

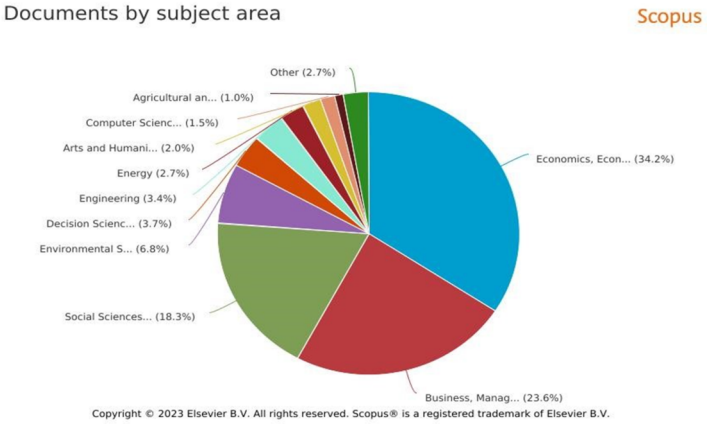

Figure 2. Themes of the Human Development Index by Field of Study

Human development has been widely studied. A search on the Scopus database over 10 years found 998 documents discussing human development. The document covers articles, books, editorials, and seminar papers. The document is dominated by articles (82.4 percent). Based on the

theme, most of the document discusses economics, business management, and social sciences. Scopus search recap can be seen in Figure 2.

The search on the Scopus database shows progress in the subject area in the Human Development Index, namely economics, business and management, social sciences, environmental science, decision science, engineering, energy, arts and humanity, computers, agriculture and others. Of the 11 subject areas above, the highest percentage is dominated by economics (34%), business management (23.6%), and social sciences 18.3%

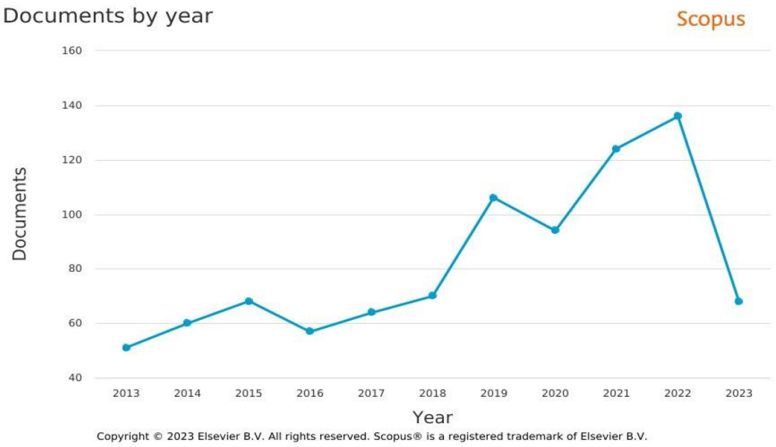

Figure 3. Annual Publication

Figure 3 presents the number of publications concerning HDI over 10 years. It can be seen that the highest number of publications is in 2020 – 2021 with 139 publications but in 2022 – 2023, it decreases to 68. This is an opportunity to develop the theme of human development. The human development index is influenced by many factors, namely Gross Regional Domestic Product (Kristiawan, 2020), poverty (Jasasila, 2020; Priambodo, 2021), investment (Pratama & Darsana, 2019), and the open unemployment rate (Priambodo, 2021; Sisnita & Prawoto, 2017). Some studies show a negative effect on the HDI, such as (Luckynuari, 2019; Utami, 2017) that the open unemployment rate has a negative effect on the human development index. Other studies (Fikri Zakiyudin; Amar Hattami, 2023; Nursiah Chalid & Yusbar Yusuf, 2014; Sulistio Mirza, 2012) found that poverty has a negative effect on HDI. Those findings indicate inconsistencies in the results or HDI still needs to be explained by the other variables. Therefore, this present study aims to examine factors influencing the Human Development Index by proposing the following research questions:

1. Does the Open Unemployment Rate variable affect Human Development Index?
2. Does the Investment variable affect Human Development Index?
3. Does the Gross Domestic Product variable affect Human Development Index?
4. Does the Poverty variable affect Human Development Index?

Literature Review

Concept of Human Development Index

One of the indicators of regional progress is human development. The United Development Program (UNDP) issued an indicator called the Human Development Index (HDI) to measure the success of human development as a benchmark for achieving higher quality human development in a country (Hasibuan et al., 2020).

HDI consists of some important indicators grouped into three main dimensions, namely 1) health, 2) education, and 3) decent standard of living. The first dimension includes life expectancy which is calculated based on the expected average age at birth and access to health services as measured by the mortality rate of children under five years and mothers at birth. The second dimension covers the literacy rate which is calculated based on the percentage of the adult population who can read and write and the school enrollment rate which is measured by the percentage of children who have received primary, secondary, and tertiary education. The last

dimension, namely decent standard of living includes gross national income per capita. This reflects the level of the economic welfare of the population of a country and is used as an indicator of a decent standard of living (Mahroji & Nurkhasanah, 2019).

The achievement of HDI between regions and over time can be measured using a tool called composite indicators of human development. The HDI score ranges between 0 and 1. The closer to 1, the higher the value of the HDI and the better quality of human resources and vice versa. UNDP categorizes HDI into four, namely (Budihardjo et al., 2020):

1. Very high HDI: HDI values ≥ 0.800
2. High HDI: 0.700 ≤ HDI value < 0.800
3. Medium HDI: 0.550 ≤ HDI value < 0.700
4. Low HDI: HDI value < 0.550

Effects of the Open Unemployment Rate on HDI

Unemployment is a condition when a person does not productive (Hasibuan et al., 2020). Unemployment can also be defined as a condition when a person at a productive age wants to get a job but has not obtained one yet. Unemployment occurs due to an imbalance between the workforce and the available job opportunities. High unemployment will cause people to be unable to improve their welfare. The increase in population will increase the number of people looking for jobs. If workers cannot find jobs, they will be included in the unemployed category. Unemployment problems become one of the most difficult problems to solve in every country.

A previous study (Ishak & Sy, 2018) reveals that unemployment is caused by some factors, namely economic conditions, government policies, development of the non-real economic sector, low education and skills, limited employment opportunities, and others. Unemployment is closely related to the termination of employment as companies will be closed or reduce their business fields due to an economic crisis or unfavorable security, regulations that inhibit investment, obstacles in the export and import process, and others. One of the indicators used to measure unemployment is the Open Unemployment Rate. Statistics Indonesia defines the open unemployment rate as the percentage of unemployed people in the total workforce. If high population growth is not accompanied by quality human resources, they will not be absorbed into the available jobs (Mahroji & Nurkhasanah, 2019).

The quality of human resources can be measured through HDI. A study (Mahroji & Nurkhasanah, 2019) regarding the relationship between HDI and the unemployment rate shows that HDI has a negative and significant influence on the unemployment rate in Banten Province. This indicates that the greater the HDI value, the lower the unemployment rate. Thus, it can be said that the government can provide more jobs by reviewing the use of budget allocations in order to reduce the open unemployment rate and eventually increase economic growth.

H1. Open Unemployment Rate affects Human Development Index

Effects of Domestic Investment on Human Development Index

Domestic investment plays an important role in a country's economic development, which in turn can affect HDI. Many studies have been conducted to evaluate the relationship between domestic investment and HDI. They reveal that there is a significant positive effect between the two. A study (Babalola et al., 2018) reveals that domestic investment directly influences important aspects of human development including education, health, and standard of living. Another study (Kee, 2015) focuses on the importance of domestic investment as a driving force for human development and reveals that domestic investment significantly increases people's access to quality education services, health facilities, and employment opportunities. This will increase overall human capabilities and contribute to an increase in HDI. Besides, effective domestic investment needs to be supported by government policies that pay attention to strategic sectors and protect labor rights in order to ensure equitable welfare.

Another study (Paolino, 2009) emphasizes the importance of domestic investment to build infrastructure in order to improve people's quality of life. Investments in infrastructure sectors such as transportation, electricity, and sanitation will open up accessibility to basic services that are

important for human development. Besides, domestic investment prioritizing rural infrastructure development can help reduce the development gap between urban and rural areas and then strengthen overall human development. Moreover, a previous study (Silvia, 2015) suggests that domestic investment focusing on knowledge-based sectors can have a positive impact on HDI. Investments in research and development, information technology, and creative industry sectors can drive innovation, increase productivity and create quality jobs. This has the potential to improve the standard of living of society as a whole and support sustainable human development.

Based on the explanation above, it can be said that domestic investment has a significant effect on HDI. Domestic investment affects important aspects of human development such as education, health, infrastructure, and knowledge-based sectors. Investments in the education and health sectors directly improve access and quality of services, while investments in infrastructure expand accessibility and reduce the development gap between urban and rural areas. Moreover, investments in knowledge-based sectors such as research and development, information technology, and creative industry sectors have a positive impact on human development. Investments in those sectors drive innovation, increase productivity, and create quality jobs. To achieve sustainable human development, governments and stakeholders need to promote effective domestic investment. This investment needs to be supported by policies that pay attention to strategic sectors, protect workers' rights, and pay attention to equitable development. Thus, significant domestic investment can become the driving force for increasing HDI and improving the welfare of society.

H2. Investment affects Human Development Index

Effects of Gross Regional Domestic Product (GRDP) on Human Development Index

Gross Regional Domestic Product (GRDP) is statistical data that summarizes the acquisition of added value from all economic activities in a region in a certain period. GRDP is an important measure in the regional economy to understand a region's economic growth, unemployment rate, per capita income, and overall economic progress (Todaro & Smith, 2014). On the other hand, HDI is a measure to describe the level of development of a country or region based on indicators of per capita income, life expectancy, and education level. The effect of GRDP on HDI has been widely discussed by economics and development experts. Many studies reveal the effect of GRDP on HDI. Experts have explained this relationship from various perspectives, for example, (Pugno, 2022) argued that high economic growth, which is reflected in GRDP, can increase people's per capita income and improve access to education and health care, thereby contributing to an increase in the HDI. Meanwhile, (Ranis et al., 2000) emphasized the importance of a balance between economic growth and a fair distribution of income so that the effect of GRDP on HDI is more positive. These factors indicate a complex relationship between GRDP and HDI.

A study (Saksena & Deb, 2017) revealed that GRDP has a positive impact on HDI through the mechanism of increasing income, the availability of education and health services, and the development of basic infrastructure. However, the impact of GRDP on HDI is not always consistent and can be influenced by economic inequality and unequal access factors. This is strengthened by another study from (Cabeza-García et al., 2019) that the quality of inclusive economic growth, which includes equal access to employment opportunities and social services, is a key factor in increasing the HDI. Moreover, a previous study (Wodon, 2017) emphasized the need to look at the qualitative dimension of the relationship between GRDP and HDI. Besides, gender equality, environmental protection, and community participation factors have an important effect on human development. Therefore, development policies focusing on economic growth should be balanced with efforts that involve these aspects to achieve a sustainable increase in HDI.

Moreover, another study (Corbridge, 2002) emphasized that human development must include broader aspects such as health, education, and individual freedom. (Ul Haq, 1996) revealed that strong economic growth must be followed by inclusive human development including fair income distribution, equitable access to basic services, and decent employment opportunities (Wodon, 2017). (Anand & Sen, 1994) showed that strong economic growth can have a positive impact on HDI dimensions such as income, life expectancy, and education. Meanwhile, t is important to look at the quality of economic growth, equitable distribution of income, and equitable

access to education, health care, and basic infrastructure services in assessing human development (Vanoli, 2012). Therefore, it can be said that GRDP plays an important effect in HDI. It is important to ensure that economic growth is followed by efforts that involve equal income, equitable access to basic services, and the availability of good job opportunities. Sustainable human development requires a comprehensive approach beyond economic aspects.

H3. Gross Regional Domestic Product affects Human Development Index

Effects of Poverty on Human Development Index

The concept of poverty varies. Poverty is no longer only defined as economically incapable but also as a situation where human resources cannot meet basic needs (Peter Saunders, 2004) which include food, clothing, shelter, education, and health. This is in line with (Corbridge, 2002) that poverty can be defined more broadly not based on insufficient income only. Poverty is a lack of one or some basic abilities needed to obtain a minimum function in social life. This is in line with (Hidayati, 2019) that poverty refers to people with lower income than the average income, so they do not have many opportunities to prosper as an individual. Statistics Indonesia defines poverty as an economic inability to meet the minimum standard of living needs as measured from the expenditure side. The minimum standard requirement is illustrated by the poverty line, namely the minimum spending limit per capita per month to meet minimum food and non-food needs. For food needs, the minimum expenditure value required is equivalent to 2,100 kilocalories per capita per day. Meanwhile, non-food needs include spending on housing, clothing, education, and health.

Poverty can be caused by needs that exceed the threshold of strength (Chambers, 2014). These needs are related to five aspects, namely customary obligations, calamities, physical incapacity, unproductive expenses, and marketing (Kadji, 2012). The causes of poverty can also be seen from three theories, namely 1) behavioral theory, related to individual behavior that is driven by incentives and culture; 2) structural theory, emphasizing the demographic and labor market contexts that cause behavior and poverty; and 3) political theory, arguing that power and policies cause poverty and moderate the relationship between behavior and poverty (Brady, 2019). Generally, HDI has a negative relationship with poverty levels. This means that the higher the HDI, the lower the poverty rate. Although not all regions have this correlation pattern, in which a high HDI value is accompanied by an increase in the number of poor people which is inconsistent with some experts (Lanjouw & Pradhan, 2002) that a high HDI will result in a poverty reduction. The low HDI will increase the number of poor people causing a decrease in productivity.

H4. Poverty has a negative effect on Human Development Index.

Methods

This study used quantitative methods. The population of this study was related to the Human Development Index of Central Java Province recorded by Statistics Indonesia (BPS). This study used panel data from 29 districts and 6 cities in Central Java Province. Data were taken from the Central Java Statistics Agency for the period 2016 to 2021. The variables used were Human Development Index, Open Unemployment Rate, Domestic Investment, Gross Regional Domestic Product, and Poverty. Data were taken from Statistics Indonesia based on the credibility of the independent and objective institution.

The stages of analysis covered:

1. Statistical Descriptive Analysis, to produce a graph of each existing variable, to find out the movement of each variable annually.

2. Panel Regression Analysis is based on panel data to observe the relationship between one dependent variable and one or more independent variables (Sunengsih, I Gede Nyoman Neneng, 2009).

Some alternative models that can be solved with panel data are:

$$Y = \beta 0 + \beta 1 X 1 + \beta 2 X 2 \ldots + \beta 5 X 5 + \varepsilon \quad (1)$$

Y = Human development index (HDI) variable,

$\beta 0$ = intercept,

$X1$ = Open Unemployment Rate variable,
$X2$ = Investment variable,
$X3$ = Gross Regional Domestic Product variable,
$X5$ = Poverty variable
With Hypothesis:
H0 = Random Effects Model,
H1 = Fixed Effects Model,
with a significance level = α, test statistics = p-value < significance value
4. Statistical Criteria Testing
a. F-test to see the effect of all independent variables in the model.
Hypothesis:
H0: β or $\beta 2=0$,
H1: $\beta 1$ or $\beta 2\neq 0$.
Significance Level = α, the value can be fulfilled by the following formula:
where R^2 = coefficient of determination, k = the number of independent variables, n = the number of cross sections, and T = time series data (Chen et al., 2020).

If the F-count > F-table, then *H0* is rejected and *H1* is accepted. This means that the independent variables simultaneously affect the dependent variable.

b. Partial Significance Test (t-test), to show the effect of one explanatory or independent variable individually on the variation of the dependent variable (Ghozali, 2011).
Hypothesis:
H0: There is no effect of the i -th independent variable on the dependent variable partially.
H1: There is an effect of the i -th independent variable on the dependent variable partially.
Significance Level = α. The t-count can be found using the following formula (2):

$$t_i=\frac{bj}{se(bj)} \tag{2}$$

where bj = regression coefficient, and se = the standard error of the regression coefficient (Chen et al., 2020). If t-count > t-table, then the hypothesis is accepted so that the independent variables individually affect the dependent variable.

c. The coefficient of determination (R^2), to measure the goodness of fit of a model. The coefficient of determination provides the proportion or percentage of the total variation in the dependent variable (Y) which is explained by the independent variable (X) (Gujarati, 2003).
5. Classical Assumption
a. The normality test is to test whether the confounding variables in the regression model have a normal distribution or not. In this study, the J-B Test method will be used if J-B $cont<\chi^2$ tables (chi-square), then the residual values are normally distributed (Imam Ghozali, 2014). where N = amount of data, Sk = Skewness, and K = Kurtosis.

b. The multicollinearity test is to test whether the regression model found a correlation between the independent or independent variables.

c. The heteroscedasticity test is used to analyze whether the error variance is fixed/constant or changing.

Results

Data Analysis

Descriptive statistics are related to the process of describing or explaining the object of the study through sample or population data. This study used data from 2016 to 2021. Descriptive statistics provide an overview of the research variables focusing on the maximum value, minimum value, mean value, and standard deviation value. The complete description of the data is presented in the following Table 2.

Table 2 shows the HDI variable with a maximum value of 77.73 and a minimum of 68.6. Based on the measurement of HDI, some districts in Central Java province have good and moderate

HDI categories. The maximum open unemployment rate reaches 9.79% with a minimum of 1.9%, meaning that around 9.97% of the total workforce is currently unemployed and looking for work.The open unemployment rate is an important indicator in measuring the state of the labor market of a country or region. Investment has a minimum value of 0 which means that some districts do not have domestic investment value. This indicates that the level of investment realization in Central Java province has not been evenly distributed.

Table 2
Description of Research Variables

	IPM_Y	TPT_X1	INVESTASI...	PDRB_X3	KEMISKINA...
Mean	74.83607	5.078786	671814.4	36676200	11.41354
Median	74.80500	4.630000	97359.45	27782313	11.26000
Maximum	77.73000	9.970000	16418900	2.05E+08	20.53000
Minimum	68.61000	1.500000	0.000000	7023900.	3.980000
Std. Dev.	1.847619	1.905013	1862873.	32522259	3.750976
Skewness	-0.766399	0.620432	5.290621	3.006935	0.293198
Kurtosis	3.750884	2.794192	36.29766	12.92752	2.451768

Source: Processed Data

An increase in GRDP indicates economic growth which means increased production and income in the region. An increase in GRDP can have a positive impact on human development and societal welfare. The minimum GRDP value can be interpreted as uneven economic growth. The difference in poverty rates is quite high indicating that there are some poor districts.

Stages of Panel Regression

The selection of panel data in this study used the Chow Test and Hausman Test. The results of the 2 tests can be seen below:

1. Chow Test is to determine whether the right model is used in the study, namely the Common Effect Model or the Fixed Effect Model. If the probability value of the cross-section fixed effects is <0.05, then the estimation model uses the Fixed Effect Model. Based on the results of the Chow test, the probability value of cross-section F is 0.0000. As the probability value is <0.05, the estimation model uses the Fixed Effect Model.

2. Hausman Test is to determine the use of the right model, namely the Random Effect Model or Fixed Effect Model. Based on the results of the Hausman, the probability value of the random cross-section probability is 0.0000. As the probability value is <0.05, the estimation model used the Fixed Effect Model. Based on the results of the Chow test, the Fixed Effect Model was selected, and the Hausman test selected Fixed Effect Model. Thus, there is no need to proceed to the LM test and the selected model is the Fixed Effect Model.

Then the model obtained from the fixed effect is:

$$Y = 74.65 + 0.057\,X1 - 6.98\,X\,10^{-9}\,X2 + 1.48\,X\,10^{-8}\,X3 - 0.056\,X4 + \epsilon \quad (3)$$

Y = Human Development Index Variable,
X1 = Open Unemployment Rate Variable,
X2 = Investment Variable,
X3 = Gross Regional Domestic Product Variable,
X4 = Poverty Variable,
Based on these data, the equations used in this study are as follows:

$$HDI = 74.65 + 0.057\,\text{Open Unemployment Rate} - 6.98\,x\,10^{-9}\,\text{Investmen} + 1.48\,X\,10^{-8}\,\text{GRDP} - 0.056\,\text{Poverty} + \epsilon \quad (4)$$

Statistical Criteria Testing

a. *The f test is to determine whether the independent variables as a whole are statistically significant in influencing the dependent variable with the hypothesis*:

H0 ≥ 0.05 (rejected) the Unemployment Rate, Investment, GRDP, and Poverty variables have no simultaneous effect on the HDI variable.

H1 ≤ 0.05 (accepted) the Unemployment Rate, Investment, GRDP, and Poverty variables have a simultaneous effect on the HDI variable.

Based on Table 3, the Prob value (F-statistic) is 0.000 <0.05, so H0 is rejected and H1 is accepted. It can be said that the Open Unemployment Rate, Investment, GRDP, and Poverty variables have a simultaneous effect on the Human Development Index variable.

Table 3
Analysis of F-test

R-squared	0.996654	Mean dependent var	74.83607
Adjusted R-squared	0.995892	S.D. dependent var	1.847619
S.E. of regression	0.118418	Akaike info criterion	-1.260437
Sum squared resid	2.341803	Schwarz criterion	-0.630402
Log likelihood	168.8250	Hannan-Quinn criter.	-1.005630
F-statistic	1308.897	Durbin-Watson stat	0.926112
Prob(F-statistic)	0.000000		

Source: Eviews Data Processed, 2023

b. *Partial test (T-test)*

A partial test or t-test is a to determine the linear relationship between two or more independent variables with the dependent variable. Besides, it is to determine the effect of variable X (independent variable) on (Y) in companies in several countries. The partial test can be concluded based on the hypothesis as follows:

1) If the probability value is ≥ 0.05, then the Open Unemployment Rate, Investment, GRDP, and Poverty variables do not simultaneously affect the HDI variable.

2) If the probability value is ≤ 0.05, then the Open Unemployment Rate, Investment, GRDP, and Poverty variables have a simultaneous effect on the HDI variable (Table 4).

Table 4
Partial t-test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	74.65373	0.163337	457.0539	0.0000
TPT_X1	0.057264	0.008128	7.045366	0.0000
INVESTASI_DN_X2	-6.98E-09	5.36E-09	-1.302515	0.1945
PDRB_X3	1.48E-08	2.14E-09	6.931970	0.0000
KEMISKINAN_X4	-0.056698	0.010101	-5.613092	0.0000

Source: Eviews data processed, 2023

Based on Table 4, it can be said that:

1. Variable X1 (OUR) has a probability value of 0.000. Because the value is <0.05, so it can be concluded that X1 has an effect on Y with a positive direction (see the direction in the coefficient section).

2. Variable X2 (Investment) has a probability value of 0.1945. Because the value is > 0.05, it can be concluded that X2 does not affect Y with a negative direction.

3. Variable X3 (GRDP) has a probability value of 0.000. Because the value is <0.05, so it can be concluded that X3 has an effect on Y with a positive direction.

4. Variable X4 (Poverty) has a probability value of 0.000. Because the value is <0.05, it can be concluded that X4 has an effect on Y with a negative direction.

c. *Coefficient of Determination Test*

The coefficient of Determination is a value (proportion value) that measures the ability of the independent variables used in the regression equation in explaining the variation of the dependent variable. The value of the Coefficient of Determination is between zero and one. The small Adjusted R Square value means that the ability of the independent variables to explain the variation in the dependent variable is very limited. The small Adjusted R Square of the Coefficient

of Determination (close to zero) means that the ability of the independent variables simultaneously to explain the variation of the dependent variable is very limited. Adjusted R Square of Coefficient of Determination which is close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable. Based on the results of panel data estimation using the Fixed Effect Model (FEM) in Table 5, the Adjusted R2 Weighted Statistics is 0.995892.

Table 5
Analysis of Coefficient of Determination

R-squared	0.996654	Mean dependent var	74.83607
Adjusted R-squared	0.995892	S.D. dependent var	1.847619
S.E. of regression	0.118418	Akaike info criterion	-1.260437
Sum squared resid	2.341803	Schwarz criterion	-0.630402
Log likelihood	168.8250	Hannan-Quinn criter.	-1.005630
F-statistic	1308.897	Durbin-Watson stat	0.926112
Prob(F-statistic)	0.000000		

Source: Eviews data processed, 2023

This means that 99.5892% of the HDI in districts/cities in Central Java Province can be explained by the independent variables, while the remaining 0.042% is explained by other variables outside the model.

The results of this estimation are strengthened by a significant F-statistical probability value at the 5% confidence level, namely 0.000000 which indicates that all independent variables have a significant effect on the dependent variable. Thus, the estimator model is feasible to estimate the parameters used.

Results of the Classical Assumption Test

The results of four-classical assumption tests are presented below:

1. Normality test

The normality test is to test whether the regression model of the confounding variables has a normal distribution. The normality test used the Kolmogorov-Smirnov test. One of the requirements of this test is the population data. A good normality test result shows a normal or nearly normal distribution. In this study, the normality test for confounding variables used the JarqueBera (J-B) test, with a significance level of $\alpha = 0.05$. The decision-making is based on the probability figures of the J-B statistics with the following conditions:

a. If the probability value is ≥ 0.05, then the normality assumption is fulfilled.

b. If the probability value is ≤ 0.05, then the normality assumption is not fulfillede.

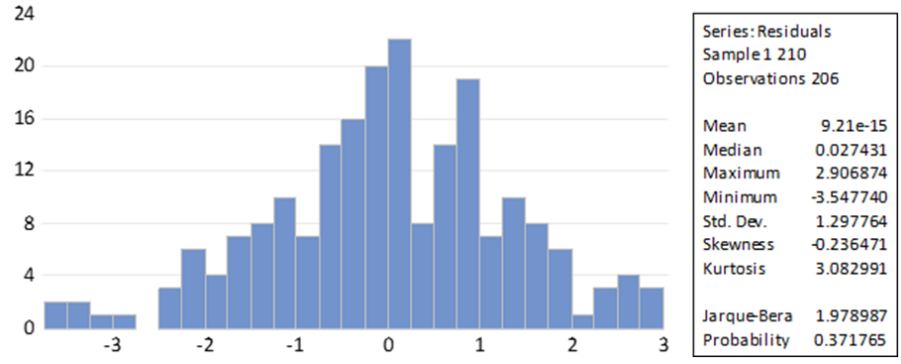

Figure 4. Results of Normality Test

Based on the figure above, the Jarque-Bera value is 1.97, while the probability value is 0.1565, which is greater than the significance level of 0.05. This means that the assumption of normality is fulfilled.

2. Multicollinearity Test

A multicollinearity test is a situation that indicates a strong relationship between the independent variables in a multiple regression model. Ghozali (2016) defines the multicollinearity test as a test that aims to find out whether the regression model found a correlation between the independent variables. The effect of this multicollinearity is to cause high variables in the sample. This means that the standard error is large, as a result when the coefficients are tested, the t-count will be smaller than the t-table. The results of the multicollinearity test are presented in Table 6 below:

Table 6
Results of Multicollinearity Test

	TPT_X1	INVESTASI...	PDRB_X3	KEMISKINA...
TPT_X1	1	0.16185992...	0.21884868...	-0.0577560...
INVES...	0.16185992...	1	0.36653541...	-0.1460016...
PDRB_X3	0.21884868...	0.36653541...	1	-0.3037564...
KEMISK...	-0.0577560...	-0.1460016...	-0.3037564...	1

Based on the table above, the correlation value between variables is less than 0.8. Therefore, it can be concluded that there are no symptoms of multicollinearity between the independent variables.

3. Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is an inequality of residual variance for all observations in the linear regression model. The heteroscedasticity test can be done with the Harvey test. The decision-making is based on the probability figures from the result of the Harvey test. The results of the heteroscedasticity test can be seen below.

Table 7
Results of Heteroscedasticity Test

Heteroskedasticity Test: Harvey
Null hypothesis: Homoskedasticity

F-statistic	1.079080	Prob. F(4,201)	0.3680
Obs*R-squared	4.330692	Prob. Chi-Square(4)	0.3631
Scaled explained SS	5.683492	Prob. Chi-Square(4)	0.2241

The table above shows that the prob F value is 0.3680 which is higher than 0.05, so the assumption of heteroscedasticity does not occur in the residual.

4. Autocorrelation Test

Based autocorrelation test obtained the Durbin-Watson value of 2.024639 with n = 40 and k = 3. The Durbin-Watson table value obtains dL = 1.119 and dU = 1.924. This shows that the Durbin-Watson is in the dU and 4-dU regions. Then, it can be concluded that the panel data regression model in this study has no autocorrelation.

Discussion

Effects of Open Unemployment Rate on Human Development Index

Based on the results of panel data regression with the Fixed Effect Model (FEM) approach, the Open Unemployment Rate has a significant positive effect on HDI. This result differs from (Todaro, 2000) that if HDI increases, the unemployment rate will decrease.

Effects of Domestic Investment on Human Development Index

Based on the results of panel data regression with the Fixed Effect Model (FEM), the domestic investment variable has a negative and non-significant effect on HDI. This means that domestic investment either high or low does not affect HDI. (Pratama & Darsana, 2019) revealed that the investment variable has no significant effect on economic growth. The insignificance of investment to economic growth indicates that the investment realized in North Kalimantan Province has not been able to optimally boost economic growth through the Gross Regional Domestic

Product. (BPS, 2020) reports that investment in North Kalimantan Province is dominant in the primary sector, namely the food crop, plantation, livestock, and mining sectors. This means that investment has not been evenly distributed in all sectors so that economic growth has increased but not significantly.

Another study (Dinarjito & Dharmazi, 2020) supports the results of this study with a negative and non-significant effect on regional economic growth. Based on the results of panel data regression using the Fixed Effect Model, the GRDP variable has a positive and significant effect on the human development index. This means that if GRDP increases, the human development index in Central Java Province will increase. It is in line with (Ansori; & Hasmarini, 2023; Maulida et al., 2022) that GRDP has a positive effect on the Human Development Index. Besides, (Sutejo Perangin Angin; Irsad Lubis; Ahmad Albar Tanjung; Aiyub Yahya, 2023) revealed that GRDP has a positive effect on HDI.

Effects of Gross Regional Domestic Product on Human Development IndexI

Based on the results of panel data regression using the Fixed Effect Model, the GRDP variable has a positive and significant effect on HDI. This means that if GRDP increases, the HDI in Central Java Province will increase. The results of this study are in line with previous studies (Ansori; & Hasmarini, 2023; Maulida et al., 2022) that GRDP has a positive effect on HDI. Besides, another study (Sutejo Perangin Angin; Irsad Lubis; Ahmad Albar Tanjung; Aiyub Yahya, 2023) revealed that GRDP has a positive effect on HDI.

Effects of Poverty Level on Human Development Index

Based on the results of panel data regression using the Fixed Effect Model, the Poverty variable has a negative and significant effect on HDI. This means that if poverty decreases, the HDI in Central Java Province will increase. Referring to (Lanjouw & Pradhan, 2002), a high HDI will result in poverty reduction. This means that the low HDI will increase the number of poor people and the decrease productivity of the population.

Conclusion

Based on the results of analysis and discussion, it can be concluded that:

1. Human Development Index is influenced by Open Unemployment Rate and Gross Regional Domestic Product.

2. The Open Unemployment Rate has a positive effect on the HDI in Central Java Province in 2016-2021. This means that an increase in Open Unemployment Rate in Central Java Province will increase the HDI by 0.057264%.

3. GRDP has a positive effect on HDI in Central Java Province in 2016-2021. This means that an increase in GRDP in Central Java Province can increase HDI by 1.48E08%.

4. Investment has a negative effect on HDI in Central Java Province in 2016-2021. This means that an increase in domestic investment in Central Java Province can reduce the HDI by -6.98E09.

5. Poverty has negative effects on HDI in Central Java Province in 2016-2021. This means that reducing poverty in Central Java Province can increase HDI by -0.056698.

6. A good model that can be used is the fixed effect model.

Limitations of the Study and Recommendation for Future Studies

The human development index is a variable that can influence and be influenced by other variables. This study uses four variables, namely the Open Unemployment Rate, Poverty, Investment, and GRDP to predict changes in the human development index in Central Java Province. Thus, the model cannot be used to measure and predict in other regions. This study provides information that the investment variable does not affect the Human Development Index. Meanwhile, the Poverty variable has a negative effect on the Human Development Index. Future studies are expected to focus on Investment and Poverty to explain why these two variables cannot predict the Human Development Index.

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BIBLIOMETRIC ANALYSIS OF THE RELATIONSHIP BETWEEN FAMILY OWNERSHIP, FAMILY GOVERNANCE, CLAN GOVERNANCE, AND TRIBAL GOVERNANCE: A FUTURE RESEARCH AGENDA

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Abstract. *This article aims to fill the gap in the literature related to clan and tribal governance which has not been studied much, by looking at previous literature studies and linking to literature studies discussing family ownership, family business, and family governance based on searches in Scopus reputable journals assisted with tools Publish or Pearish, VOSviewer, and Blibliomagika software that is linked and developed for future research topics. Using a literature review, assisted by Publish or Pearish (POP) software, VOSviewer To estimate the model and analyze data collected from the Scopus database. The data is then broken down based on the annual document, subject area, search keywords, authors, published journals, affiliations, the country of origin of the publication, and clarifying the future research agenda. The results of the study show that the terms clan, tribal and family governance have not been disclosed much in previous research even though these topics can be studied more broadly than the concepts of family ownership and family business. From this concept, it can be directed and connected to the concept of entrepreneurship, SMEs family, CSR, financial reporting, family shareholders, cash flow, non-family firms, and many more. The practical implications of the results of this research are to fill the gap in the literature on clan/tribal governance, which is still interesting to develop. The originality of the study provides clarity on the relationship between family ownership, family business, and its developments that lead to family governance.*

Keywords: *family ownership, family business, family governance, clan governance and tribal governance.*

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Introduction

The term family ownership or family governance, which appeared early in 1979 was introduced by Sternlib and Burchell with the term multi-family, this term was associated with multi-

family housing demand (demand for multi-family households). This term was only used correctly in business in 1981 by Davis & Stern (1981) in their article on adaptation, survival, and family business included in an integrated systems perspective. Family ownership is also often associated with the term family business. The family behind the firm, the entrepreneurial family with a portfolio of businesses, family business governance, and the function of the business family in society are four distinct areas of family business scholarship that came together to create this family business (Carney & Dieleman, 2023). The term family ownership is also the same as the term tribal governance, the term tribal governance first appeared in 1988 Broome & Christakis, which reviews related to a Culturally Sensitive Approach to the Management of Tribal Governance Issues.

Private family companies are generally run by " members of the same blood, marriage, or adoption family" (Villalonga & Amit, 2020). Family firms in the private sector are the most common form of organization worldwide and are considered to be the lifeblood of the worldwide economy (Villalonga & Amit, 2006). Mittelstand family-owned small and medium firms (SMEs), for instance, are among the most profitable and successful industrial exporters in the nation and serve as the foundation of the German economy (Roscher, 2015).

Family ownership, by definition, would imply that family members have a higher level of equity in their company. This may lead them to prefer a more conservative investment strategy as they are the residual claimants and assume the greatest risk (Fama & Jensen, 1983). It is also possible that companies with a greater share of insider ownership are less threatened by hostile takeovers (Weston, 1979). From the various things above, it is very interesting to be able to find out more about this family governance or family ownership. We try to be able to review further, so this study aims

1. Provides an extensive literature review on family ownership, family governance, clan/tribal governance
2. Clarify the concept of family ownership, family governance, clan/tribal governance
3. Look at the existing literature related to this concept.
4. Explore trends in family ownership, clan and tribal governance research and suggest future research topics

We Organize this paper in five parts. The first part discusses family ownership, clan and tribal governance in general and explains the purpose of the paper. In the second part, we review whether family ownership, clan and tribal governance are closely related and related. We clarify this in this section. In the third section, we present the method and methodology steps used to conduct a literature review. The results of the VOSviewer and Publish Or Perish software are discussed in Part four. Conclusions, and suggestions for future research are presented in Section Five.

Literature Review

Family ownership actually occurs with the concept of interaction between families, ownership and management of family businesses that create arrangements to improve their performance (Azizi et al., 2021). Family ownership is always associated with family business, (Habbershon & Williams, 1999) To explain how family relationships contribute to business success, They introduced the idea of "family," which they defined as "a particular bundle of resources that belongs to a particular firm because of systemic interactions among families, individual members, and the business," and described family businesses as "complex, dynamic, and rich in intangible resources". Therefore, (Suárez et al., 2023) considers "the family" provide family businesses with a competitive advantage. Due to its enormous contribution to the production of jobs and income, family businesses are a type of organization that are becoming more and more important as a cornerstone of growth and success (Navarro-Caballero, M., Hernández-Fernández, L., Navarro-Mano- tas, E., and Hernández Chacín, 2020) Indeed, the economic importance of family enterprises has resulted in their increasing impact in recent decades in the institutional environment (Aranda et al., 2021).

The term family business was first expressed by (Van den Berghe & Carchon, 2002) Family businesses claim a definite place as a collection of diverse sorts of enterprises due to their different ownership structures, leadership, and evolutionary dynamics. Unlike other forms of businesses, the family business is prevalent in many nations (Gersick et al., 1997; Shanker & Astrachan, 1996; Ward & Aronoff, 1990)

The concept of tribal governance by reviewed by (Broome & Christakis, 1988) This notion is related with tribal government or what is known as tribal governance, which takes a culturally sensitive approach to management. There have always been official government-to-government connections between the tribes and various European powers. The colonial authority, and later the federal government, recognized the tribes' autonomy and developed a distinct political relationship with them (Ortiz, 2002). A tribe is defined as a group of persons or families who are linked by patrilineal descent (Barakat, 1993; Barber, 2007) as well as share the same tribal name (Al-Hamadi et al., 2007; Risse, 2019). The National Financier (2008) provides a list of tribes to identify the directors on the GCC board and defines a family or tribe as the collection of all people with the same last name.

Clan is defined byCollins (2006), Even in the twentieth and twenty-first century, clans are socially embedded networks of identities that exist in many civilizations and countries, rather than being a pre-modern occurrence. Today's tribe members are often paid rather than pastoral, and they are frequently urban as well as rural (Cooke, 2014; Miller, 2007; Shryock, 1997). Despite the fact that terminology like "clan," "tribe," and "lineage group" are frequently used in social science fields in ways that make demarcation ambiguous, studies conducted by Hudson et al., (2015) backs up Collins' pay attention to the definition of "clan" as "an informal organization consisting of networks of individuals linked by kin-based bonds". Its core, which also serves as its identity and organizational linkages, are affective relationships of kinship.

Table 1
Point Of View Author For Family Ownership And Family Business

Author	Family Ownership – Family Business
Habbershon & Williams, (1999)	system, family, individual member, and business interactions", to explain family relationships on business success
Van den Berghe & Carchon, (2002)	different ownership structures, leadership, and evolutionary dynamics
Azizi et al., (2021)	interactions between families, ownership and management of family businesses that create arrangements for improving their performance
Carney & Dieleman (2023)	the family behind the company, the entrepreneurial family with a portfolio of activities, the governance of the business family, and the role of the business family in society
Villalonga & Amit (2020)	Family firms are generally managed by "members of the same family by blood, marriage, or adoption

Table 2
Point Of View Author for Family Governnace, Clan Governance and Tribal Governance

Author	Family Governance – Clan Governance – Tribal Governance
Collins (2006)	socially embedded network of identities that exist in many societies and countries
Collins (2004); Eickelman, (2002); Hart, (1970); Khazanov (1984); Hudson et al., (2015)	an informal organization consisting of a network of individuals connected by kin-based bonds
Broome & Christakis, (1988)	A culturally sensitive approach to management linked to Tribal Governance
Ortiz, (2002)	Colonial power, which recognized the sovereign status of the tribes, and developed a unique political relationship
Barakat, (1993); Barber, (2007)	a group of people or families who have a kinship relationship with patrilineal bloodlines
Al-Hamadi et al., (2007); Rise, (2019)	It is the same as what Barkat and Barber defined and strengthened by bearing the same tribal name

Source: Mapping author

These relationships, which connect elites and non-elites in a vertical and horizontal fashion, represent both real blood ties and made-up kinship (Collins 2004; Eickelman, 2002; Hart, 1970; Khazanov, 1984).

Tables 1 and 2 below are various concepts from the author's point of view regarding family ownership, family business, clan governance and tribal governance.

From the definitions of Table 1 and Table 2 that the authors reveal about family ownership, clan governance and tribal governance there is a related relationship. We make a groove like the one below.

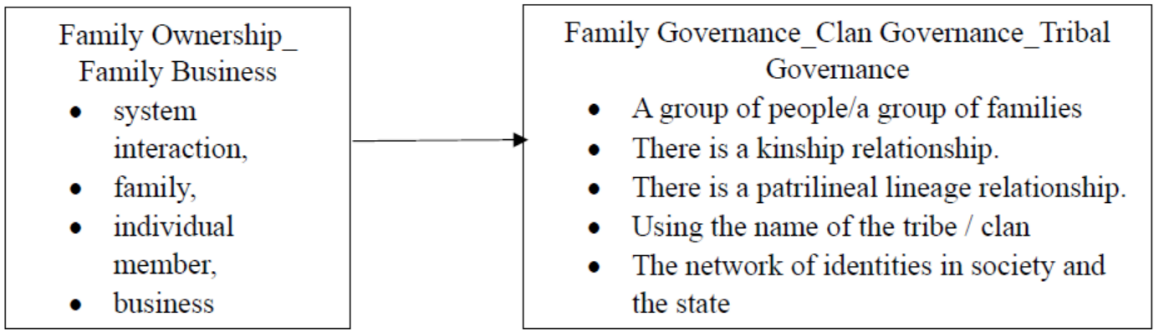

Figure 1. Relationship Flow of Family Ownership_Family Business with Clan/ Tribal Governance *(Author source)*

We provide a clear picture of this relationship, namely family ownership is more focused on the interaction of systems, families, individual members, associated with business. When the interaction group forms a group of people or families who have kinship relations with patrilineal bloodlines by using the same clan or ethnic name in an identity network in society and the country, it will change to clan governance or tribal governance. We illustrate with the following flow:

From this start, a family/clan/tribe formation path can be made; governance as follows:

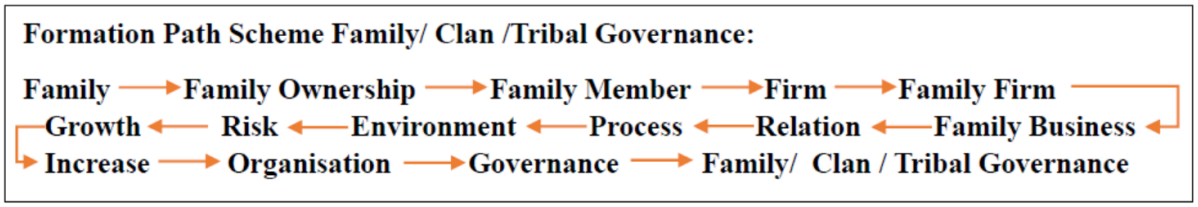

Figure 2. Formation Path Scheme

Source: Author

Methods

Preliminary search data was collected from Google Scholar (GS) database and Scopus database with Harzing's Publish or Perish (PoP) software The beginning of the article reveals Family Ownersip Clan and Tribal Governance from 1998 to 2023.We use the keyword including family governance as well when searching to broaden our search for family ownership, clan and tribal governance with keywords on Scopus and Google Scholar.

Results

The keywords used for the search are: **"Family Governance" OR "Clan Governance' OR" Tribal Governance" OR "Family Ownership"**. From the initial search results obtained as many as 1465 documents.

The number of documents obtained from Scopus per year can be seen from the table and graph below (Table 3-5, Fig. 3).

From the Scopus data search results from 1979 to 2023, a search for articles on Scopus obtained as many as 1258 articles, remaining articles included book chapters, books, reviews, conference papers, etc. Articles that are filtered are included in the Scopus Q1-Q4 database. This means that for the publication of articles or 85, 67% of the total number of existing publications. The method used to filter theoretical/conceptual research is the snowball method without limiting the year or limiting the publisher of the theoretical article by screening based on sensitivity. We also

searched Scopus for initial searches, including but not limited to, the subject area of research from Scopus refined value.

Table 3
Analyze progress per year

Years	Articles	Years	Articles
2023	100	2004	9
2022	177	2003	10
2021	112	2002	7
2020	123	2001	6
2019	118	2000	1
2018	97	1999	9
2017	100	1998	3
2016	93	1997	1
2015	85	1996	3
2014	65	1995	3
2013	64	1994	3
2012	53	1993	3
2011	48	1991	4
2010	42	1989	1
2009	27	1988	2
2008	24	1984	1
2007	27	1983	1
2006	26	1981	1
2005	15	1979	1

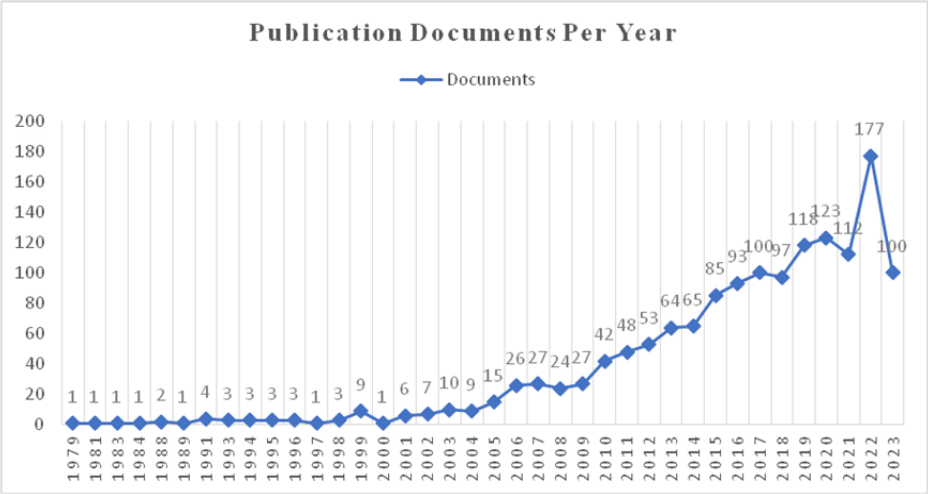

Figure 3. Graph Analyze per year

Table 4
Analyze progress per year cited

Years	Articles	Cited	Years	Articles	Cited
2023	100	83	2004	9	862
2022	177	505	2003	10	5532
2021	112	650	2002	7	368
2020	123	1462	2001	6	319
2019	118	1890	2000	1	1
2018	97	1825	1999	9	545
2017	100	1663	1998	3	171
2016	93	2410	1997	1	162
2015	85	2492	1996	3	45
2014	65	2158	1995	3	118

2013	64	2729	1994	3	52
2012	53	2144	1993	3	160
2011	48	2407	1991	4	222
2010	42	3504	1989	1	18
2009	27	1702	1988	2	78
2008	24	3270	1984	1	11
2007	27	3679	1983	1	10
2006	26	6120	1981	1	17
2005	15	3297	1979	1	1

Table 5
Total Documents

Document Type	Total Documents(TP)	%
Articles	1258	85.87%
Book Chapter	77	5.26%
Reviews	54	3.69%
Conference Papers	49	3.34%
book	13	0.89%
Note	5	0.34%
Erratum	3	0.20%
Retracted	3	0.20%
Editorial	2	0.14%
Short Surveys	1	0.07%

From the results obtained for the subject area Business, Management and Accounting, a total of 1105 documents were obtained and Economics (Table 6).

Table 6
Analyse Subject Areas

Subject Areas	Articles
Business, Management, and Accounting	1105
Economics, Econometrics, and Finance	731
Social Sciences	270
Arts and Humanities	94
Environmental Science	59
Decision Sciences	57
Engineering	49
Computer Science	39
energy	30
Agricultural and Biological Sciences	22
Psychology	21
medicine	18
Mathematics	11
Biochemistry, Genetics, and Molecular Biology	6
Multidisciplinary	5
Earth and Planetary Sciences	4
Materials Science	4
Pharmacology, Toxicology, and Pharmaceuticals	4
Chemical Engineering	3
Health Professions	3
Immunology and Microbiology	3
Physics and Astronomy	3
Neuroscience	1
Nursing	1

From the table above, it can be illustrated by drawing 2 graphs as explained below:

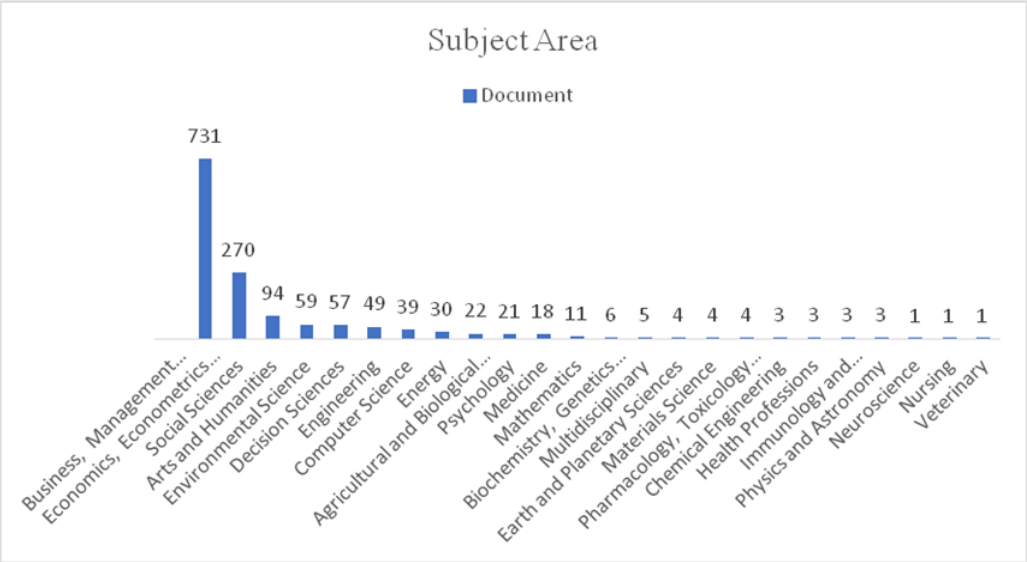

Figure 4. Graph Analyze Subject Area

Keyword analysis was used to map out the words most often associated with Family ownership and family business, with good numbers indicating that the dimension has been studied frequently. The following is a graphical illustration of key words cited in many empirical articles that reveal family ownership and business, as shown by the VOSveiwer tool for search results from Scopus below.

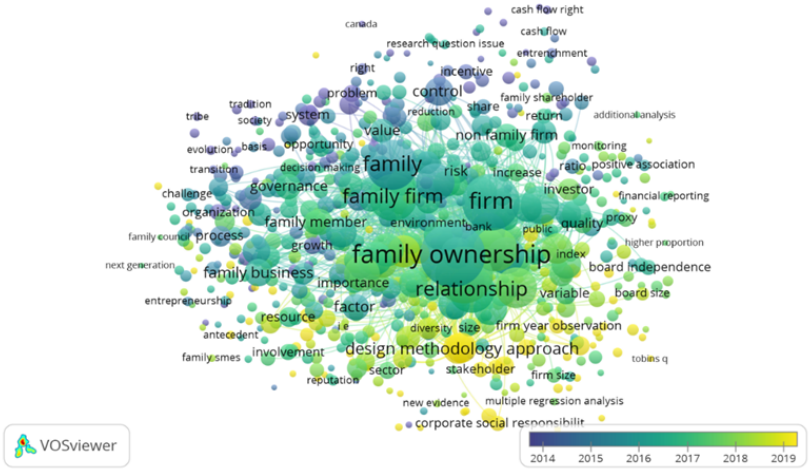

Figure 5. VOSviewer Shows The Various Ways Researchers Write Keywords

Figure 5 VOSveiwer above shows the various ways researchers write in keywords. The figure shows that some researchers use the terms "family ownership", "family firm", "relationship", "firm", and "family". These five terms in empirical research are used interchangeably with keywords such as "family ownership" which shows that the majority of researchers examine the phenomena that occur. Below are the top 20 keywords that frequently appear on searches in the Scopus database

Discussion

The use of Publish or perish software, VOSviewer, Bibliomagika really helped us . as explained by the VOSviewer tool above and searches from Scopus which are included in the Bibliomagika tool, the keywords that always appear in the top 20 publications are as described in Table 5 below.

Preliminary search data collected through the Scopus database with Scopus, Publish or Perish (PoP) software from Harzing, assisted by Blibliomagika from the beginning of the article

revealed Family Ownership Clan and Tribal Governance, the following is the level of activity of the author in writing an article (Table 7-8).

Table 7
Publication Keywords

Keywords	Total Publications (TP)
Family Ownership	336
Family Firms	285
Corporate Governance	230
Ownership Structure	105
Family Business	104
Family Firm	81
ownership	80
Firm Performance	70
Agency Theory	66
performance	47
Innovations	44
Family Governance	43
Corporate Social Responsibility	41
Socioemotional Wealth	40
Family Control	38
Firm Ownership	37
Earnings Management	35
Ownership Concentration	33
Internationalization	32
Financial Performance	29

Table 8
Analyze Author

Author	Articles
DeMasis, A.	15
Miller, D.	11
Kotlar, J.	10
Millie, E.	10
Chrisman, JJ	7
Chung, CN	7
Eddleston, K.A	7
Kellermanns, FW	7
Minichilli, A.	7
Ossorio, M.	7
Tsao, CW	7
Block, JH	6
Calabrò, A.	6
Cucculelli, M.	6
Hashim, H.A	6

The Table 8 above shows the activeness of the author in publishing articles, from the results obtained for the author DeMasis, A.obtained as many as 15 articles and Miller, D. 11 articles, Kotlar, J. and Memili, E. 10 articles; Chrisman, J.J., Chung, C.N., Eddleston, K.A., Kellermanns, F.W., Minichilli, A., Ossorio, M., Tsao, C.W., 7 articles; Block, JH, Calabrò, A., Cucculelli, M., and Hashim, H.A. in 6 articles. We only take 15 Authors with the highest level of publication.

Table 9
Journal Name, Total Publication Results (TP) and Scimago Journal Rank (SJR)

Scientific Journal	Total Publication (TP)	Scimago Journal Rank (SJR)
Journal Of Family Business Strategy	53	1.99
Family Business Reviews	42	2.06
Journal Of Family Business Management	35	0.64
Corporate Ownership And Control	28	0
Corporate Governance An International Review	27	1.22
Small Business Economics	26	2.73
Asia Pacific Journal Of Management	24	1.41
Journal Of Business Research	21	2.9
Sustainability Switzerland	18	0.66
Entrepreneurship Theory And Practice	16	4.32
Journal Of Banking And Finance	12	1.72
Corporate Governance Bingley	11	1.35
Managerial Finance	11	0.33
Cogent Business And Management	10	0.52
International Journal Of Innovation Creativity And Change	10	0
Others 139	570	

The Table 9 above shows that empirical research on family ownership has been widely published in the Journal of Family Business Strategy with a total of 53 Total Publications (TP). The second rank is occupied by Family Business Review which has 42 TP. Journal Of Family Business Managements many as 35 TP, Corporate Ownership And Control 28 TP. And up to 20 Journals that publish the most articles. The highest Scimago Journal Rank (SJR) is 4.32 Entrepreneurship Theory And Practicethe second is Journal Of Business Research at 2.9 then Small Business Economics at 2.73. Family Business Reviews 2.06 and Journal Of Family Business Strategy 2.99. While the journalScimago Journal Rank (SJR) 0 is Corporate Ownership And Controland International Journal Of Innovation Creativity And Change.

Table 10
Publication Affiliation

Affiliation	Articles
Northern University of Malaysia	27
MARA University of Technology	24
Università Bocconi	23
Jönköping International Business School	22
WHU - Otto Beisheim School of Management	17
College of Business, University Utara Malaysia	16
HEC Montreal	15
City University of Hong Kong	15
National University of Singapore	15
University of Alberta	14
Lancaster University Management School	14
Universität de València	13
Università degli Studies in Bergamo	13
Universidad de Oviedo	13
The University of North Carolina at Greensboro	13

The highest number of affiliates is from the Northern University of Malaysia 27 articles, followed by MARA University of Technology many as 24 articles; Università Bocconi with 23 articles; Jönköping International Business School with as many as 22 articles and WHU - Otto Beisheim School of Management with many as 17 articles. The full distribution of data on institutions that publish articles can be seen in the Table 10 above. We are deep.

Table 11

Analysis of countries and the number of articles published

Country	Articles	Country	Articles	Country	Articles
United States	287	New Zealand	16	Peruvian	2
Italy	139	Portugal	16	Qatar	2
United Kingdom	136	Japan	15	Russian Federation	2
Spain	117	Mexico	15	Uganda	2
Malaysia	108	Chile	14	Venezuelan	2
China	97	Viet Nam	13	Zimbabwe	2
Taiwan	75	Norwegian	12	Argentina	1
Australia	74	Lebanese	11	Bosnia and Herzegovina	1
Germany	65	Yemen	10	Brunei Darussalam	1
Indonesia	65	Bahrain	9	Burkina Faso	1
India	62	Brazil	8	Ecuador	1
Canada	61	Colombia	6	Federated States of Micronesia	1
France	43	Egypt	6	Georgian	1
Hong Kong	41	Poland	6	Iraq	1
Pakistan	39	Bangladesh	5	Kuwait	1
Sweden	39	Cyprus	5	Latvia	1
Saudi Arabia	32	Greece	5	Libyan Arab Jamahiriya	1
Belgium	30	Oman	5	Liechtenstein	1
Jordan	29	Ireland	4	Macao	1
Netherlands	28	Israel	4	Monaco	1
South Korea	27	Croatian	3	Nicaragua	1
Singapore	26	Czech republic	3	North Macedonia	1
Tunis	24	Slovenia	3	Palestine	1
Switzerland	22	South Africa	3	Papua New Guinea	1
Turkey	22	Tanzania	3	Philippines	1
United Arab Emirates	19	Ghana	2	Puerto Rican	1
Finland	18	Hungary	2	Slovakia	1
Austria	17	Luxembourg	2	Trinidad and Tobago	1
Denmark	17	Malta	2	undefined	49
Iran	17	Moroccan	2		
Thailand	17	Nigeria	2		

Based on the table above, the geographical distribution can be described on the map below as follows:

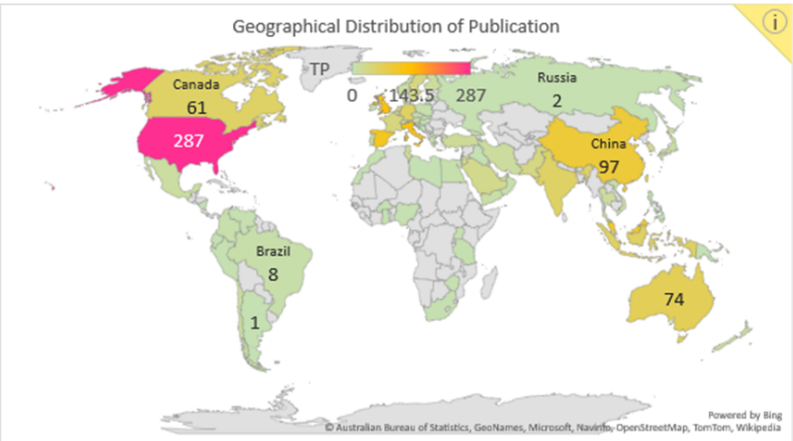

Figure 6. Geographical Distribution of Publications

From Scopus data, the search results show that in the countries that published the most articles related to family ownership, the United States ranked first with 287 articles, followed by Italy with 139 articles, the United Kingdom with 136 articles, and Spain with 117 articles. The full distribution of data for countries that publish a lot can be seen in the table above.

Table 12
Search Results From Article Titles

Search Results from Article Titles	
Clans	5
Clan Governance	2
Tribal	17
Tribal Governance	5
Tribe	3
Family Ownership	328
Family Governance	42
Family Business	230

From the results of the search for the title of the article obtained from the Scopus that has been carried out, several words are obtained from the title of the article that often appears, namely Clan, Clan Governance, Tribal, Tribal Governance, Tribe, Family Ownership, Family Governance, Family Business. The most dominant words that appear in the search for the article's title are 328 Family Ownership, 230 Family Business, and 42 Family Governance. The term family ownership will develop and evolve into tribal or clan governance when an informal organization consisting of individual networks connected by ties based on relatives and strengthened by bearing the same tribal name as well as the term tribal governance. Tribal governance appeared for the first time in 1988; this term reviews related a culturally sensitive approach to managing tribal governance issues.

The linkages of family ownership, family business, clan governance and tribal governance Figure 7 below:

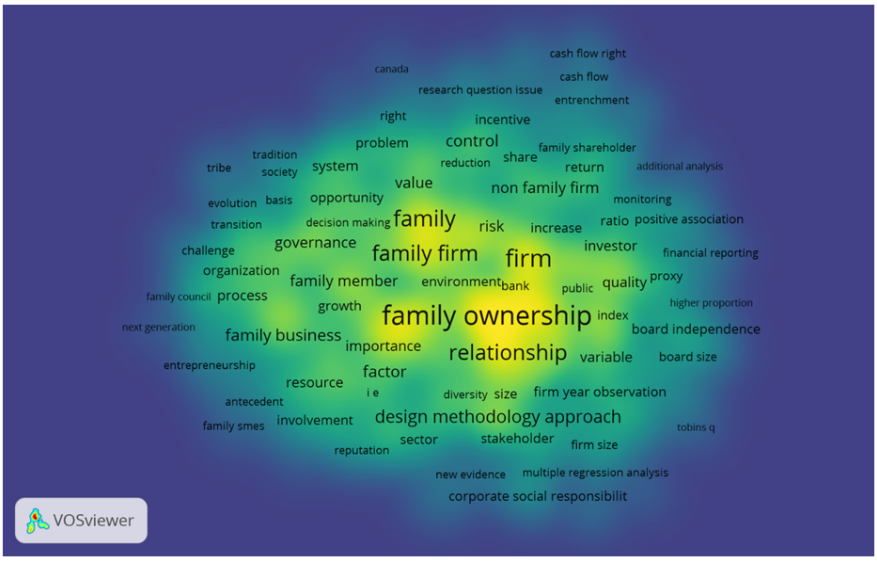

Figure 7. VOSviewer The Linkages of Family Ownership, Family Business, Clan Governance and Tribal Governance

From the bright yellow spot it can be shown that it is a relationship

Family Ownership → Family → Family Member → Firm → Family Firm
Family Business → Relations → Process → Environment → Risk → Growth
Governance ← Organization ← increase

Lastly, governance is clusters that are close to each other and will later form a concept which, as we have summarized, shows how the concept of family ownership, family business, and clan/tribal governance developed.

Future Research Prospects

From what is shown in the picture of VOSviewer family ownership, and family business, there is still a lot to be developed towards entrepreneurship, family SMEs, tribe/clan, CSR, financial reporting, family shareholder, cash flow, independent board, board size and many other topics can be developed. See what has been described in Figure 7 VOSviewer above.

Conclusion

Overall what has been explained above can answer our research objectives, namely to provide an extensive literature review on family ownership, family business, which is developing in a broader direction, namely into family governance, clan and tribal governance in particular, clarifying the concept of family ownership, clan, and tribal governance we provide everything we explore from software assistance, POP, VOSviewer, Bibliomagika to be able to exploit many things that can help researchers who will research related to the topic of family ownership, family business, family governance, clan and tribal governance. How and where to publish it, seeing from the country, and what journal will be addressed for publication. We also find that the term clan, Tribal and family governance is still not much discussed in the research, even though this topic can be studied more broadly than the concept of family ownership and family business. We have also explained that with the help of the VOSviewer POP software, to view existing literature regarding these concepts and what is. Lastly, we have also explored trends in family ownership, clan and tribal governance research and suggested future research topics based on our observations. Governance, clan and tribal governance. Where is family.

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DYNAMICS OF STAKEHOLDER NETWORK IN TOURISM VILLAGE DEVELOPMENT DURING THE COVID-19 PANDEMIC ON MODELING CHARACTERISTICS AT TISTA AND PEJATEN TOURISM VILLAGES, TABANAN DISTRICT

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Abstract. *This study discusses the relations dynamics between stakeholders such as indigenous peoples, the private sector, and State, especially in the destinations management of tourist villages during Covid 19 pandemic. This pandemic has brought significant changes to the pattern and performance of tourism management in Bali. One of them is in the destination's development of tourist villages in Bali. The Covid-19 pandemic has brought significant changes to the pattern and performance of tourism management in Bali. In the tourism management due to Covid 19 pandemic, all parties involved should be followed the regulation to prevent this separation such as the implementation of health protocols, tourism promotion activities that shift towards online, adjustment changing in user behavior in traveling. This research applies theoretical frame of Actor Network Theory (ANT). This theory provides a methodological tool in exploring the ideal forms of dynamics relations among the three stakeholders that are strongly influenced by the discourse that arises and takes place around them, including placing patterns of non-human actor relationships that also determine new behavior in relationships, especially in efforts to develop tourism villages. The data collection used is interviews, observations, and documentation by implementing locus studies at two villages namely Tista and Pejaten Villages moreover they have different focus on development such as natural development, religious tourism, and handicraft development. The results show that network modeling between stakeholders in Tista and Pejaten Tourism Villages more receiving instructional programs or in terms of political science, it is dominated by vertical or unidirectional power, namely local governments, in this case provincial governments that directly carry out guidance considering the importance of uniformity commands for tourism implementation in the new normal phase. They are based on being directed at the concept of community-based tourism, which is very effective in being used in the midst of the COVID-19 pandemic as an effort to recover the community's economy which is declining and reorganize the tourism implementation that does not pay attention to the local community. Through the application concept of community-based tourism, the implementation of tourism through tourism villages is expected to achieve tourism goals, especially increasing economic growth, improving people's welfare, eliminating poverty, and overcoming unemployment which is now widely occurring due to the COVID-19 pandemic.*

Keywords: *Stakeholder; Tourism Village; Covid 19 Pandemic; Dynamic Relations; and Tourism Development.*

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Introduction

The Covid-19 pandemic situation has had a major impact on many sectors. One of the sectors that experienced the biggest impact from this situation is tourism sector. It was recorded that the potential loss of the tourism sector in Bali from leisure and mice suffered losses reaching USD 9 billion or around 140 trillion rupiah. The percentage of tourist visits to Bali as a whole decreased or plummeted to 93.24 percent (Subadra & Hughes, 2022). Neither has the actual condition of tourist villages in Bali in 2019 been stretched, including in developing innovation and self-promotion, through various independent efforts and facilitation from each local government or occurring when the Covid 19 Pandemic situation lasted for several months, suddenly many developments of tourist villages in Bali had to be faced with the harsh reality of postponing many events and activities as well as postponing promotional activities (Nusa Bali, 2 Oktober 2020). This condition is certainly a common concern, considering Bali as the main tourist destination in Indonesia as well as overseas and also most of the Balinese community rely or depend on the livelihood of this tourism sector. Departing from these conditions, it is necessary to conduct a study specifically the results of which look for opportunities to contribute views on handling the development of tourism villages even though the pandemic period that is still ongoing nowadays.

This study aims to analyze the dynamics of stakeholder networks in the development of tourism villages, especially during the Covid-19 pandemic. Bases on the analysis, it is expected that this research is going to produce a model related to network relations between stakeholders, both in Tista and Pejaten Tourism Villages. This study aims to discuss how these stakeholders adapt new habits related to the Covid 19 Pandemic and their application in the development of tourism villages in the future. These two villages were chosen by the author considering the different characteristics of the developing type's focus of village tourism offered to tourists. In addition, the development of tourism villages has always been faced with a crucial problem, namely being 'forced' to have the ability to market itself to the tourism market, both at the local, national, and global tourist markets. The free competition of the tourism market requires tourism villages to have extra capabilities in synergizing their interests with various existing stakeholder networks. These stakeholders are certainly not only internal parties, such as official village officials, traditional villages, tourism awareness groups, etc., but also external parties, which in each tourism village development have different stakeholders from each other.

According to the results of Udayana Excellence research conducted by researchers in the previous fiscal year, in 2020, it was recorded that the existence of knowledge agents at the village level, including tourism villages, was limited to contributing their thoughts to the interests of sectoral village development. This condition is also without projecting the continuity of the use of interest networks among stakeholders, especially in the framework of future interests, including when entering a new era during the ongoing Covid 19 Pandemic crisis. In addition, village governments, especially in the development of tourism villages, rarely have follow-up documents in the form of existing stakeholder network mapping frameworks and take place in the development of tourism villages.

Moreover, many literature studies have been carried out related to the development of tourism villages, especially in terms of planning, SWOT-based projections, to the impact that must be borne by local communities from efforts to develop tourism villages (Utama, 2021). This qualitative type of research analyzes the limitations of tourism village management using case studies in Blimbingsari tourism village. In the analysis, these two authors used analysis with marketing strategy frames and SWOT frameworks. Data collection conducted in this study used interviews. In this conclusion, the author concludes that market limitations are still a problem for the management of Blimbingsari Tourism Village. Therefore, by analyzing the Strengths, Weaknesses, Opportunities and Threats faced by Blimbingsari Tourism Village by using SWOT analysis, marketing strategies that able to be applied are obtained, namely product packaging strategies, promotional strategies, repositioning strategies aiming to provide extra services for tourists. The other study from (Widnyana et al., 2020) mentioned in the research by using SWOT analysis with case study at Babahan Village, Tabanan Regency affirming that the potential of nature

and culture, and support from external factors provides a very high opportunity to develop into a community-based tourism village. There are several alternatives that can be applied in its development, namely related to destination aspects, industrial aspects, marketing aspects and institutional aspects.

The development strategies suggested by this research include, among others, strategies for creating a brand image of Kenderan tourism destinations, strategies for creating accessibility towards tourist attractions, strategies for creating the environment around tourist attractions, strategies for developing a variety of rural tourism products based on the uniqueness of local potential, strategies for increasing tourism industry product certification, strategies for increasing marketing activities for rural tourism products, strengthening strategies The entrepreneurial spirit of rural communities in the field of tourism, strategies to build institutional governance, and so on. The other research from (Purnomo et al., 2020) mentioned that the continuity of community empowerment through the development of tourism villages includes its implications for the socio-cultural resilience of the region. Through case study type research in Penglipuran Tourism Village, the research collected data through interviews. The results of their research are argued by discussing the stages of the community empowerment process in Penglipuran Tourism Village, namely the awareness stage, capacity stage, and powering stage. The process involves more community participation starting from planning, implementation and evaluation.

There are still various obstacles in implementing to community empowerment, especially related to efforts to maintain both of culture and customs from the flow of modernization, community attitudes, limited human resources and availability of tourist accommodation, as well as lack of promotional activities. Community empowerment through village development is ultimately stated in their study to have implications for the socio-cultural resilience of the region in the form of strengthening and changing social, cultural, and environmental values. However, concerning the study from (Nurkhalis et al., 2018) mentioned that there was limitations on the community empowerment, such as not mapping the stakeholder actors involved in efforts to develop the community empowerment process, and does not include how actors influence in contributing to local community values. This also includes the influence of non-human actors or actants, such as their presence during the current Covid 19 Pandemic. This is a certainly not only seen as an obstacle, but also an opportunity that can be solved by the actors' networks of who will be explored in this research plan.

The other study had also been conducted by (Hari Nalayani, 2016) had a little closeness to the study that the author will do because in one of the narratives, this study confirms related to the development of tourism villages that require good planning. Therefore, stakeholder cooperation is needed in this case, especially the government, entrepreneurs, and the community, especially the local community. This collaboration aims to develop tourism villages in a better direction which is able to prosper community around. The theories used by (Hari Nalayani, 2016) in the study are planning theory, sustainable tourism, Community Based Tourism (CBT) and alternative tourism theories. Although in this research, (Hari Nalayani, 2016) stated the importance of stakeholder cooperation in this case, specifically the government, entrepreneurs, and the community, especially the local community. This collaboration aims not only to develop tourism villages in a better direction, but also the research does not discuss specifically the role and potential of networks between these stakeholders. Moreover, in each of their characteristics in facing the Covid 19 Pandemic period nowadays.

By applying mix methods, namely qualitative and quantitative research, referring to the research from (Hari Nalayani, 2016) which emphasized more towards focusing on the description of tourism potential in each tourism village and its nature is more evaluative towards the development of tourism villages in Badung Regency. (Hari Nalayani, 2016) also included the conclusion that the direction of development in each tourism village experienced dynamism between stakeholders, especially in the form of synergistic cooperation, was not specifically described. These cases are going to be discussed in this study which will also try to elaborate formulations related to development strategy plans in each group that is influential in the development of tourism villages.

Referring to the previous tourism study conducted during the Pandemic by (Hendry Ferdiansyah et al., 2020), they mentioned that the Covid-19 pandemic very quickly became a crisis that affected the tourism sector. Social restrictions, as a first step to prevent the spread of this pandemic, becoming a big dilemma for tourism business actors. This research from the beginning aims to find out how to mitigate the tourism crisis carried out by the village. This research is a qualitative research type with conceptual study methods with secondary data acquisition, such as the use of news data collection, literature studies, and other sources. The research results from (Hendry Ferdiansyah et al., 2020) explained that the mitigation management plan prepared to face the new normal phase.

This research uses a case study in Nglanggeran Tourism Village and the results reveal that factually this tourism village produces several mitigation concept steps, including innovation and collaboration, namely by conducting alternative tourism innovation programs through virtual tourism with several travel agents as external parties. By implementing upskilling human resources through establishing communication forums, tourism webinars, and forming village volunteers. The communication through the delivery of existing conditions to visitors who have made reservations before the tourist ban). Carry out government instructions such as the determination of Extraordinary Events, Large-Scale Social Distancing and tourism bans. Holding a crisis center by forming a crisis team and also accelerating Covid-19 data information through the website named corona.jogjaprov.go.id). Improving maintenance, revamping villages and improving tourism support facilities. This research has a closeness, especially in providing views related to solutions during a Pandemic. It's just that this study does not provide stakeholders who run the program both internally and externally. The understanding in carrying out the program surely show there is a dynamic relationship between stakeholders, including the role of non-actor carrying capacity (actant), in addition to the Covid 19 Pandemic itself which has also changed the new system in tourism.

Literature Review

This research classified into political science studies, because it discusses the important role of actors, especially stakeholders in carrying out various activism in building and developing power networks. Political science focuses its study on power, it is associated with the analysis of the dimension relationships between stakeholders, both with human actors and with non-human actors (actant). The power dimension is a major focus in the study of political science, especially in questioning how power is exercised. One of the relatively new theoretical frames in the political science approach to inter-actor studies application of Actor Network Theory (ANT) theoretical framework. In this theory, actors are understood to have different networks of interests with each other and tend to form networks that are considered mutually beneficial. It's just that, in the current situation of the Covid 19 Pandemic, it is also more important to include non-human actor factors (actant), especially in looking at the dimensions that also effect on the dynamics of tourism village development, both from the influence's aspect of pandemic impact and with the supporting capacity of information technology which ultimately contributes in encouraging and changing habits of the new normal and in this research is associated with efforts to develop tourism villages.

In the theoretical framework of Actor Network Theory (ANT), the dimension of the Covid-19 Pandemic is not only positioned as a non-human actor (actant) but also take an important role in influencing new human habits, including stakeholders aim to develop tourism villages. Several studies related to tourism villages that have been discussed previously do not explicitly discuss actors with capacity as external or internal stakeholders. The theoretical frame in this study uses ANT, where the scholar of this theory has initially predicted that change is not only always determined by human actors, but also non-human actors (actant), the theory's scholar had initially predicted that change was not only always determined by human actors, but also non-human actors (actant), according to the scholars (Callon, 1999; Stark et al., 2001; Tresch, 2013) developed a methodological aspect, referred to as "Actor-Network Theory (ANT)". This approach bases itself on the assumption that human social life has changed over time occurs due to changes in associations

or relationships between human and non-human elements. Non-human objects such as telephones, books, airplanes, ships, viruses, bacteria, disasters, also define social life.

The People are ultimately connected to these objects in an associational network. Without planes and ships, Indonesian would not be able to physically be in Europe and interact directly with Europeans there. According to Actor Network Theory scholars, the association factor between elements in the network is what makes social interaction work. Therefore, according to Actor Network Theory, all factors involved in social phenomena need to be viewed equally. People are not the only agents in social change. Human activities, relationships, are affected by changes in non-human elements. Conversely, changes in non-human elements are also influenced by actions and relationships between human beings. These scholars believe that the non-human element has also become an 'agent' because it has shaped and defined social relationships and networks themselves. In this research, ANT network methodology then strengthening by the authors with a supporting concept, namely with the concept of assemblage from (McFarlane & Anderson, 2011). This concept emphasizes that the components corelate in social associations, both human and non-human components, are dynamic, and instable. A social phenomenon is an association consisting of heterogeneous and dynamic elements or objects. The components that make up a phenomenon able to come and go as well as form new relationships.

According to this theory, social science has often been stuck in observing the social world as a structure of static social objects. The theory of assemblage illustrates social phenomena as mosaics that are always in motion, have fluid configurations, and are constantly changing. In its quest to understand social phenomena, as well as knowledge accumulation activities, future social science will need to focus on how human and non-human elements dynamically associate. In this network, the model can then be seen, whose actors are supported in what form and why, as well as are going to map how the role of non-human actors in the action's form on dynamics relationship. In the tourism research field, there are actually several studies that implement this ANT theory, contrary the number is limited and the subject is not directed at the analysis of the dynamics relations between stakeholders in tourism villages development. This research has differences from previous studies, namely looking at the dynamics of relations between stakeholders in the development of tourism villages, especially during the Covid 19 Pandemic through ANT theory frame work analysis tool.

This research is important in line with the amount budget reduction reallocated or refocused for dealing with Covid-19 pandemic in several district governments throughout Bali. therefore, these results are going to be achieved in the research that able to contribute to the recovery program of local tourism village development, including maintaining the sustainability studies related to tourism villages in forming or compiling policy briefs (policy sheets). It is going to plan submitted to the relevant village government also expected to be the basis for the village government concerned as a basis consideration in making policies related to tourism village development programs as well as strategies. Based on this description, this study aims to take a problem formulation of how does stakeholder networks dynamics develop the tourism villages during Covid-19 Pandemic? How to model networks between stakeholders in Tista and Pejaten Tourism Villages.

This research has three categories important thing, they are consisting of as follows: First, this study takes the locus of tourism villages, grassroots areas where the potential for tourism development involves participation and is felt directly by communities. Second, rural villages in Bali are encouraged by local governments, both at the district and provincial government levels, since the implementation of village regulations as well as the inclusion of direct budgeting assistance at the village level, this area is approached by various knowledge agencies, both government and non-government. This research become an important thing in observing synchronicity between knowledge agency actors who have been approaching at the village level. Third, this study takes villages in Bali, an area that is inseparable from the duality of custom and state, as well as the reality of those who are currently being pursued many targets for achieving village status, one of which is the category of independent tourism villages introduced by the central government. This condition is believed to include many struggles or battles between knowledge

agency actors. Nowadays, the analysis related to the existence of village change actors is still limited to the positivistic paradigm. Actors are analyzed in the fields both of political science and public administration, where their contribution only to form formulation or implementation contrary does not analyzed as influential agencies to form knowledge in decision making and other strategic development policies. The dominant study related to the actor's analysis at the village level or government at the lower level has so far focused a lot on relations with vertical governments within the framework of authority dominance.

Referring to the study from (Andrews-Speed et al., 2003), which emphasized the existence of knowledge actors at the village level when answering the dominance of vertical government legal and regulatory systems. By presenting the practice of managing small-scale coal mines in China which in reality contributes greatly to the country's energy supply, in fact at the same time these actors have to voice the negative impacts faced by their local communities. Such as waste of coal resources, high accident rate, among local miners, and various environmental damages. In this effect, knowledge actors couldn't do nothing and passively face the pressures of complex institutional structures including the authoritative regulation of small-scale coal mining businesses. Knowledge actors at the local level dwell on various burdens that represent the legitimate interests of Vertical Government through applicable laws and regulations. The limitation of the study to be overcome by this research is the absence of efforts from knowledge actors at the local level. They become passive actors when facing state domination. In contrast to this research context, where knowledge actors will be positioned as active knowledge agencies with diverse interests working behind them.

Another study was conducted by (Ban & Rao, 2008) mentioned that they explore the increase in women's participation in the village-level public sector encouraged by educated elites. Taking the context of India which is patriarchal by the caste system, it turns out to place women as leaders who occupy strategic positions at the village level. This position placement cannot be separated from the encouragement of knowledge agencies working in village councils (panchayats) by looking at the women's experiences whose are considered to perform well compared to men. This later became the basis for them to promote women to participate in public office positions in the village, despite strict caste rules. The limitations of the study rather observe the knowledge's agency as an inherent actor or inherent in the formal institutions of the village. These are not the encouragement of knowledge that has the authority to influence policy making comprehensively, factually it describes how women deal with patriarchal situations around them.

Those studies still position knowledge agencies to work singularly at the village level. While the other study from (Mutersbaugh, 2002) provided an explanation by emphasizing the many dimensions of knowledge agency at the village level. Against the backdrop of rural migration policies in Mexico, (Mutersbaugh, 2002) emphasized the tendency of migration decisions taken by villagers as a boost to income improvement. This decision is taken from the knowledge participation of civil society organizations and communities. Knowledge between them is negotiated and contested with social practices that take place at the village level, facing pressure/domination of state bureaucratic power as well as the market. This study aims to refute the theory of migrant network agents who come into contact with transnational spaces by emphasizing the ability of local (village) to create an independent decision armed with knowledge from the participation of CSOs. The studies from (Mutersbaugh, 2002) and others still position actors as limited or partial agents of knowledge. It has not described the pattern of relations between actors of knowledge agency, the running of interests, and the forms of negotiation, compromise, as well as contestation that are built among them. In addition, the study from (Tangenberg & Kemp, 2002) emphasized that the knowledge's agency cannot be separated from the reality of interests/ideologies encompass it. Knowledge runs on diversity and equality based on experience and work practices. This knowledge orientation leads to empowerment and integrating various knowledges integration for life.

According to the research from (Manela & Moxley, 2002) emphasized knowledge agency as a party that intervenes knowledge into institutions or organizations in order to improve

organizational performance, improve services, management, as well as even administrative systems. The knowledge they intervene in has benefits and relevance to organizational empowerment practices. Knowledge agents take a role in the creation, application, and knowledge's dissemination in a certain period of time commitment depending on the successful program continuity. The knowledge development practices that agencies run align with their personal and professional values. On its characteristics, agency actors develop knowledge that does not require too long and drain energy, because they take into account the compensation they would be received.

The study above has not described specifically concerning how the dynamics and relationships between knowledge agency actors and stakeholders in the village. This depiction is going to be tried to be observed in the capacity of this research study. The big question of this research design aims in observing and providing a new perspective where this meaning has approached the definition of agency in villages only as a formal organization, not an effort that observe to position the activism of knowledge discourse taking place in the formulation and implementation of village development. It is believed that the village is going to never be immune from various interests of agency actors residing around it. This interest is what actors bring in interpreting their knowledge through the offer of diverse programs. The authority in this position is interpreted not only as an effort to produce knowledge, but also to show an effort in arranging an agenda. This condition is then understood as a form of dynamic of knowledge agency actors. This form is going to be searched, analyzed, and compiled its typology to find out the characteristics of the interests built from knowledge agency respectively.

- The Concept of Knowledge Agency Actor

This research operationalizes concepts related to knowledge agency actors from pre-existing studies. According to the study from (Kockelman et al., 2007), give the example such as creation of knowledge practices from agency actors largely adjusts the culture and vision of the organization, including the performance of the services that are its goals. Those Indicators can be seen are the existence of offers for the best service concept, efforts to improve performance, and how to achieve satisfaction from service users.

However, referring to the study from (Kockelman et al., 2007), it was emphasized that leadership is needed to facilitate the vision's achievement both of goals and measure whether or not the various existence of dominant knowledge of the agency concerned. The most important thing is the ability to relate the agency's knowledge from the staff and articulate positive benefits to the institution. The positive thing about knowledge agency is that it opens up learning opportunities. However, if the development of the organization is not accompanied by the support of knowledge agencies, this will slowly kill the organization concerned, both in terms of funding, staff, and networks. In this study, (Kockelman et al., 2007) emphasized the role of knowledge agency offers strength, both in terms of accountability and flexibility. The agency guides directing priority programs among the many development program options available previously. Those Agencies consciously influence knowledge to others with the diverse characteristics and controls they exercise. The effectiveness of knowledge agency is able to interpret from the determination of decisions.

Another concept that supports this research referring to the study from (Mirbagheri & Mashayekhi, 2015) explained the work of knowledge agency actors as a form of professional service organization. Agencies have limited decision-making power, even though they have a major role in intensifying the dissemination of knowledge. At an agency perspective, the existence of a knowledge agency actor professionally exchanges its expertise with the owner, manager, or leadership of the organization. Agencies sometimes have opportunistic characters while they have agency professionalism as seen from self-control, community control, bureaucratic control, or client/user control of services. Agencies are required to have a specific knowledge and expertise. It becomes an important thing to provide benefits for the development of a capable organization, especially in managing it more professionally.

- Discourse Theory According to (Laclau, Ernesto; Mouffe, 2013)

This research plan was going to utilize the discourse theory put forward by (Laclau, Ernesto; Mouffe, 2013). This case as an effect of the theory emphasizing the hegemonic aspect of discourse production. Discourse is not always inferred because it will never fulfill at one point even able to intersect, or contradict altogether (Townshend, 2004). Related to this research, agency actors able to be assumed to produce knowledge while does not dominance of mainstream (general) state policies, contrary propose other alternative whose are outside the mainstream policy. Knowledge agency actors might be involved in planning, implementing and monitoring certain policy evaluations at the village level. Knowledge contains discourse related to the categorization of development concepts surround it. In this articulation, there is a power struggle for knowledge about village development and its categorization.

In this theory, aspects of village development and their categorization are placed as empty signifiers or empty markers and cannot be sensed. Knowledge of village development is not singular contrary the result of compromise, tolerance, amalgamation of categorization that has been fighting around it. Empty markers refer to ideas neither that cannot be sensed nor their meaning will appear signified. This sign hegemonizes when its meaning becomes a universally empty marker (Arditi, 2010). Through the guidance of discourse theory, it will be known the dominant perception that shapes the construction of development and its categorization. This case creates an easier thing to identify the actors of knowledge agency constructing discourse. Through this research, this condition is clear that village development is not only merely described in a normative mechanistic manner, but also it is critically analyzed in the eyes of these knowledge agency actors, including when they diagnose all inhibiting as well as driving factors comprehensively.

Methods

The design of this study classified as qualitative type. Qualitative methods follow research procedures that produce descriptive data, namely in the form of written words of observed behavior (Moleong, 2006). This research is directed at describing the research object holistically (thoroughly) through a case study strategy. The case study strategy in this research is directed at qualitative types by emphasizing exploratory questions (who, what, and how) descriptively. In the case study strategy, researchers have no control over the objects to be studied, by observing, interviewing and analyzing real-life data and processes that researchers cannot intervene. In this case study, researchers want to observe the depth of reality by exploring both of cases and patterns of actors' presence phenomena, knowledge agencies and their influence on village development along with all forms of categorization.

In the case study strategy, there is a specificity of certain periods and places the understanding, in different periods and places, there are changes in knowledge, both in the context of sociology, economics, and politics. There are two types of case study strategies, among others, single case study and multiple case study. In this research design, it took the type of multiple case study, with locations in Tista Village and Kerambitan Village, Kerambitan District, Tabanan Regency. The choice of these two villages observes the proof that adjacent areas with the same administrative authority is going to have different agency actors as well as their interests. The time period taken is the time period of enactment of the Village Act, namely (Presiden Republik Indonesia, 2014) from 2016 to 2019. During this period, it is believed that villages are often used as a competition for various sectoral interests that interpret the vertical government elites' necessities, civil society organizations, academics, along with various dynamics. Especially in line with independent planning and fund management which is confirmed through the implementation of this village regulation since 2016 until nowadays.

In obtaining data holistically, the technique of collecting or collecting research data is carried out through steps as follows:

a. Observation is a technique of comprehensively observing events or reality that occur around the research object

b. Interview is a data collection technique through direct question and answer where the questioner (interviewer) is physically facing the party being questioned (interviewee). The interview method used in this study is an in-depth interview method guided by a list of interviews that have been made / prepared in advance (interview guide). In-depth interviews in a study aimed to collect information about phenomena in society (Roller, 2019). The applying interview technique is intended to obtain primary data on the existence of knowledge agency actors at the village level in Bali.

c. Document study is the activity of analyzing documents or written data related to this research.

The technique of determining informants is carried out by purposive sampling, that is, they are considered to have knowledge in accordance with the research topic. In this technique, researchers interviewed several key resource persons first at the district government level, namely the village government administration office or coordinating body including the local sub-district government. Then the data collection technique in the form of interviews continued to Perbekel village as the research location. In this resource person, through the snow ball technique, it is wished that key information is going to be obtained as a very important thing related to the research respondents to be interviewed, including stakeholders who have been interacting directly with knowledge agency actors at the village level.

The object of the study is the tile roof's business owner around Tabanan Village classified as the gender and age such as; female and aged around 40 years old and data collected is then interpreted into transcriptions of interview results. The results of these interview transcripts are sorted and categorized according to research necessity. The presentation of this research is carried out by combining the data processing obtained from informant interviews and documentation obtained, both and information from other supporting media (books, internet, etc.). The Data analysis will use Critical Discourse Analysis (CDA) from Fairclough. Its speech's effect from the informant interview of this research result objects is going to be observed for certain meanings that are considered relevant and then drawn relation patterns to the macropolitical structure behind the speech.

Results

As one of the villages in Tabanan Regency, Pejaten Village has considerable potential. By the blessing of geographical conditions that allow it to be used as appropriate goods, it will be very unfortunate if this utilization is not carried out optimally. One of the great potentials of Pejaten Village is the production of pottery, such as roof tiles and bricks. Roof tile is a component in a building that takes the role and function of a roof that covers the upper surface, and is placed stacked and overlapped. Clay as a raw material for tile is an option in consideration of making a building on the basis of its weight which is light enough, has strong compressive power, being able to absorb heat, and ideal in reducing in noise when exposed to the rain. In Bali Province, the roof tile's production in Pejaten Village is quite widely known, it is not uncommon to find roof tiles attached with the brands "pejaten" as the original characteristic of Pejaten Village production.

Pejaten Village is located in Tabanan Regency and has a distance as far as ±45 minutes from the center of Denpasar City. The name Pejaten village is popular in Balinese conversations when they intersect with the problem of finding building materials, especially tiles, for the roof of their houses. Pejaten Village is a village well known with industrial tourism of processed clay raw materials. In this village produce roof; ceramics; and pottery, as the potential for tourism industrial. Roof tiles and materials made of clay are the main commodities that are also an attraction for both of domestic and international tourists who have the curiosity to be involved in the manufacturing process of clay into a ready-to-use material. The productive potential possessed by Pejaten Villagers has a domino effect in a positive context. On the one hand, Pejaten Village is known as a productive village that is active with its clay works. On the other hand, the creativity existence that come from Pejaten villagers able to be developed and also become community's life skill as their "safe zone" in terms of profession or employment. If this condition was connected to the theory from (Stoyanov,

2017), mention that human needs are physiological; security; affection-sense of belonging; appreciation; and self-actualization, it can be said that Pejaten community has obtained physiological needs (as productive citizens) as well as self-actualization and appreciation (as a popular tourist village community). These two indicators certainly provide benefits for the lifestyle of the Pejaten village community in fulfilling their life necessities.

The transition began to be felt in Pejaten Village in 2020. The rambunctious began to be experienced by Pejaten Village Community during Covid-19 cases could no longer be stretched around the world. For almost 2 years, human activities have been faced with the COVID-19 pandemic. The economic and tourism sectors are the main sectors becoming an important part of Pejaten's community. However, this pandemic can be seen from the decline in sales turnover of the main sector of Pejaten Village to changes in daily behavior standardization, to the impact that is greatly affected by the pandemic, as a cause and effect of the coronavirus health emergency. This condition is understandable that this disaster does not necessarily happen to Pejaten Village. However, as a village depending on the tourism sector whose people live based on the arrival of domestic and international tourists, the role of third parties become the most supporting factor for Pejaten Villagers.

The Pejaten community is still struggling with the tile industry; ceramics; and pottery, currently complicated by the depletion of clay resources as the main material in creating products at this industry. Pejaten industry, which has been pioneered since 1942, was originally intended to facilitate access to cooking and completeness in Hindu religious rituals, contrary in actual condition the main ingredients needed were increasingly difficult to find directly in Pejaten Village. This resulted in Pejaten community having to find and obtain raw materials and mixed materials from outside Pejaten Village. Surely, this condition makes the capital spent much larger compared to previous condition, not to mention the hard blow of the Covid-19 pandemic.

One of the business owners in this industry, named Mrs. Wahyu, did not escape the significant impact in this pandemic situation. The 40-year-old female, who now has a grandson, explained that unlike usual, where income from tile operating profits is relatively fixed and stable previously, now due to the pandemic, the production of processed tiles is not too much purchased by consumers. With the number of tile production per day that produces 90 pieces, the decline in the number of consumers forced her to reduce the standard unit price of tile which was originally price amount from IDR. 1,200.00 to IDR. 900.00. In this economic crisis season, she made tile business as a side profession. The lack of public interest in construction activity during this difficult economic period has the same impact for her who have owned businesses since the 90s period. She added that of the many new crises, the impact of Covid-19 was very pronounced.

During the period from 1995 to 2002, explained by Mrs. Wahyu which was the year for her efforts to reach the peak of glory. In 2002, in the midst of grief that hit the Balinese due to the bombing that occurred, the economy and market demand received by Mrs. Wahyu actually increased. This indicates that tile roof business will survive if development is present and occurs on a large enough scale. Mrs. Wahyu, whose is currently collaborate with her brother's business, who is also a business owner, uses flower passages in her flower garden to increase her income. Flowers are very important in Hinduism rituals in Bali; therefore, they are able to be an opportunity and they utilize flowers to be sold in traditional markets around Kediri District, Tabanan. For the subsidizing during the pandemic, Mrs. Wahyu said that there was no special subsidize from the government for business intensification. The subsidize that has been given so far is only in the form of basic necessities. In keeping her business running, she utilizes the People's Business Credit (KUR) program from BRI bank.

Discussion

The similar condition also experienced by other roof tile's entrepreneurs, such as Mr. Made Wirawan, who's also competing in this industry. He has company's production that is higher than Mrs. Wahyu who is only engaged in home production. If Mrs. Wahyu and her family are able to produce 90 pieces of tile per day, Mr. Made and his two manual laborers are able to produce 500

pieces of tile per day. This amount is certainly reasonable, considering that Mr. Made is assisted by his employee in the production process. Additional facilities when consumers buy at Mr. Made's company are in the form of transportation access. Larger scale of production of the enterprise; use of wholesale labor assistance; And additional transportation facilities for the delivery of consumer goods, certainly effect on the price offered greater than home production. The differentiation made by Mr. Made resulted in a calculation of the unit price of tile amounting from IDR.1,300.00 to 1,500.00 / day. However, he should reduce the standard price to IDR. 1,100 / day because of the decrease in the consumer needs and effecting on the amount of his income per month. Which before the pandemic was able to earn from IDR 5,000,000.00 / month to only IDR 3,000,000.00 / month, and during this pandemic it is not constantly obtained. Regarding government assistance for business development, just like Mrs. Wahyu, Mr. Made stated that during the pandemic, basic food necessity was only obtained. Meanwhile, for interaction with the government regarding his tile business, he was asked to fill in data which he thought would be used by the government to record roof tile entrepreneurs in Pejaten Village. However, until this interview was conducted on October 23, 2021, there is no definite clarity from the data registration.

Moving away from tile tourism micro-businesses, Pejaten traditional market is the second sector in the village that has also experienced the impact of the pandemic. Mrs. Amanda, as Tipat food and beverage vendor, said that the pandemic reduced people's buying interest in shopping at the market. Mrs. Amanda, who sells in Pejaten market area until the afternoon admits that in ±1.5 years of the pandemic, people's arrival to the market has been limited. If previously market activity was active from early morning to noon, now, trading transactions are only crowded until 9 A.M. In addition, the market crowd during this pandemic only lasts when people are going to hold religious rituals so are approaching Hindu holidays in Bali. This condition keeps her longer to peddle wares every day until the afternoon. According to Mrs. Amanda, the decease income of the community is the determination of the lack on consumer interest in shopping activity at Pejaten traditional market.

Conclusion

Bases on interviews and other information sources obtained from Pejaten Village, it was found that stakeholders who providing Pejaten Village in handling sustainability as a tourism village are students, national private banks, Pejaten Village Government, Regent of Tabanan named (Dr. I Komang Gede Sanjaya, SE., MM), Vice Regent (I Made Wirawan, SE), and Chairman of the Regional Representatives of Bali Province (Nyoman Adi Wiryatama). Along with Pejaten Village Government, basic food necessity distributes to the village community with the intention of supporting productivity of the clay industry through fulfilling their daily necessity. Meanwhile, the other support given by those officers consist of Infrastructure facilitating in the form of hotfix for paving village roads that has been carried out as an alternative access both of the community and tourists to pass by in the tourism village and at the same time is also intended to embellish aesthetic image of village tourism. According to the Bank's contribution, some local entrepreneurs (such as Mrs. Wahyu and Mr. Made Wirawan) use People's Business Credit (KUR) BRI aiming to obtain monetary assets. In addition, according to the presentation of resource persons who are native indigenous of Pejaten Village stated Real Work Lecture is a form of contribution from college students in assisting villagers to get up from pandemic buried through online promotion of village products; provision of plant seeds and access to vaccines; as well as provision of free health protocol support tools to the community.

Meanwhile, when the interview topic turned to the question "what do policies often hinder and vice versa, what policies do you think will be beneficial for the development of Pejaten tourism in this new normal period?", they stated that The Community Activities Restrictions Enforcement rules and mandatory vaccination policies sometimes hinder their mobilization in the process of finding raw materials at Bantas area. However, regarding the vaccination policy, they also agreed for all Pejaten Villagers to immediately implement the vaccine program. The mandatory vaccine policy, according to them, are going to accelerate the recovery of the socio-economic situation while encouraging new policies to normalize the tourism opening in Pejaten Village. In addition,

the vaccine policy will also provide immunity's stability of villagers, therefore they will be safely able to explore all potential resources and as an outcome will contribute to the image intensification of Pejaten Village.

The conditions occur in Tista Village have a Tourism Village Awareness group known as (Pokdarwis) of Tista Village which has been established since April 16, 2016. This management was further strengthened based on the Regent Decree Number 180/274/03/HK&HAM/2016. During the Covid 19 Pandemic, the condition of Tista Tourism Village was more inactive, yet in as serious as Pejaten village because this tourist village had offered more natural and cultural wealth previously. The potential for tourism development supported by the existence of Tri Kahyangan Temple located and Meraja Pati temple located east of Bale Wantilan during the Pandemic is only used as a means of worship. The presence of the Tourism Awareness Group (Pokdarwis) of Tista Village in Wantilan Tista Kerambitan Village, Tabanan, which had previously prioritized maximizing the potential of art, culture, and culinary, in the end during the Pandemic and The Community Activities Restrictions Enforcement became more of a foundation for the recovery of the economic sector, especially for people who were really affected by the pandemic.

In the fields of art and culture such as Andir performances, charcoal candidates, jogged roofs and Sekha Santhi are more to support the performance of ceremonies in custom. Likewise with spiritual potential, namely Beji temple, Batu Gede and Yoga Seruling Dewata which are original relics from Bali. Meanwhile, the training, which before the Pandemic period was intensively provided by university agencies and local governments, was for culinary tourism, there were various kinds of Balinese snacks, such as Apem, Kaliadrem snacks, sweet potato donuts, catfish meatballs Tista and many more which then giving support recovery of post-pandemic conditions, especially in developing SMEs.

In mapping the acquisition of temporary data, there is preliminary information that has been and is being carried out by the author, namely the network carried out by stakeholders of Tista Tourism Village influenced by the following factors such as follows: (1) the tourist destination sector of Tista tourism village is based on nature and culture, the decline in tourist numbers has an impact on decrease income for tourism villages; (2) Network efforts are built and carried out more perfective and protectional properties until this study carried out still has not brought the number of tourist visitation. Even in the implementation of The Community Activities Restrictions Enforcement, non-tourists have experienced both domestic and foreign tourists; (3) preventive efforts involve cross-service with the district as a technical sector that handling the socialization of health protocols or the implementation of tourism services in the new normal phase, such as synergy with the tourism office and health office; (4) For projective efforts to cooperate with agencies or travel agencies continuing to promote online both of domestic and foreign tourists; (5) Obtaining guidance and socialization from vertical agencies such as offices of the District Government.

Meanwhile, the network carried out by stakeholders of Pejaten Tourism Village consists of as follows: (1) The tourism sector is declining, while the village government and synergy with tourism awareness groups are conducting a safety net by building certainty in the supply of raw materials and tile finishes to distributors both of Bali and outside Bali; (2) Conducting consultation and guidance from vertical agencies both to Tourism Awareness Group (Pokdarwis) and tourism villages; (3) Cooperating with agencies or travel in promotion activity schedule online to domestic and foreign tourists.

Network modeling between stakeholders in Tista Tourism Village and Pejaten Tourism Village is more accepting of instructional programs. Moreover, in terms of political science, it is dominated by vertical or unidirectional power, namely local governments, in this case provincial governments that directly carry out guidance considering the importance of command uniformity for tourism implementation in the new normal phase. This command uniformity is based on being directed at the concept of community-based tourism, which is very effective in being used in the midst of the Covid-19 pandemic as an effort to recover the community's economy whose are in decline and reorganize the implementation of tourism that does not pay attention to the local

community. Through the implementation of the concept of community-based tourism, the tourism coordination through tourism villages is expected to achieve tourism goals, especially increasing economic growth, improving people's welfare, eliminating poverty, and overcoming unemployment which is now widely occurring due to the COVID-19 pandemic. In addition, the government is also expected to strictly monitor the implementation of the CHSE program effectively in preventing the transmission of COVID-19.

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ARTIFICIAL INTELLIGENCE AND THE STRATEGIC CHANGE OF THE ACCOUNTANT'S ROLES: A THEORETICAL APPROACH

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Abstract. *Background: Based on the premise that technology has changed the way in which the Accounting profession is exercised, it becomes relevant to understand the challenges that Certified Accountants face when using artificial intelligence.*

Method: Smart technologies have enormous potential as tools at the service of accounting and the preparation of financial and non-financial information for decision-making, however, they also affect the practice of the profession, which legitimizes concerns about the evolution of the profession and the need to assume new functions.

Results: The greater the incorporation of technology in companies, the more and better skills accounting professionals will need to ensure to show their relevance and ability to add value. This rapidly evolving scenario requires a real change in the accountant's functions, but also the possibility of emerging new opportunities. Thus, the present research proposal consists of a descriptive study with a quantitative and qualitative component and aims to analyse the potential use of artificial intelligence in accounting, and its consequent impact on the functions of the accountant.

Conclusion: The quantitative component will be supported by a questionnaire addressed to Certified Accountants, while the qualitative component will be supported by an interview guide and will have the purpose of collecting comments on the proposed objective, as well as on the results obtained in the quantitative analysis..

Keywords: *human factor, organization, organizational change, resistance, management.*

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Introduction

Throughout history, the challenges related to accounting functions have evolved in line with the development of the business world, tax policies and technology. This evolution is evident in its object, but also in the support methods and instruments. As Smith (2017) argues in the face of this evolution, the traditional focus on the compilation of quantitative data and historical information that is updated only periodically makes less and less sense, so accounting professionals must be willing to embrace the changes that occur in the current business scenario.

According to the McKinsey Global Institute, most current jobs will be automated by 2030 and accounting services that have already been automated will be affected by Artificial Intelligence (AI) freeing accountants to provide more consulting services (Shaffer, Gaumer, & Bradley, 2020).

Ghandour (2021) warns that accounting and control systems are changing dramatically due to technological advances, environmental complexity and the emergence of new organizational structures, noting that the accounting profession will face significant changes in the coming decades, referring to the study Drivers of Change and Future Skills carried out by the Association of Chartered Certified Accountants (ACCA). This author also points out that accountants will use increasingly sophisticated and intelligent technologies, including cloud computing (Cloud Services), and that globalization will continue to create opportunities and challenges, as it encourages the flow of money between capital markets and enhances the provision of services abroad, but also because it promotes an increase in the sharing and transfer of technical and professional skills with different cultural and financial systems. Another important aspect, referred to by the author, is the increase in regulations in the field of taxation and money laundering.

Other authors such as Melnyk, Trachova, Kolesnikova, Demchuk and Golub (2020) state that, following globalization and the evolution of digital and intelligent technology, accounting professionals are abandoning a posture traditionally focused on technique, and of a very static nature, to start supporting the management of companies with greater and better collaboration in the strategic area. This new posture will require new knowledge, mastery of new technologies, social skills and professional flexibility. For these authors, this change in priorities and functions will transform the challenges faced by the accounting sector and the accounting profession, and a greater mastery of technologies combined with soft skills can significantly improve the ability to create value, and therefore improve career prospects. This new emphasis on the performance of functions with a component more related to strategic information to support decision-making is crucial, as argued by Zhang, Xiong, Xie, Fan and Gu (2020). According to these authors, new technologies have introduced radical changes in the practice of many professions, including accounting, giving as an example a study carried out by the British Broadcasting Corporation (BBC) News in 2018, on professions with the potential to be eliminated due to the introduction of AI and in which accountants occupied the 21st position out of a total of 366 professions and with a probability rate of 96%. Zhang et al., (2020) also mention that at the Klynveld Main Goerdeler (KPMG) Information Technology (IT) Internal Audit Conference 2016 and 2017, about half of the 120 auditors present confirmed the use of AI in their organizations and 80% reported that they had no confidence in the use of this technology. The four largest companies in the Deloitte sector, PricewaterhouseCoopers (PwC), KPMG, Ernst & Young, already use their own financial robots, which are capable of automatically recognizing data, inserting invoices and generating financial reports.

In this sense, and given the realization of this new reality, the present research proposal emerged as relevant and useful, both in terms of improving understanding of the technologies themselves, and in increasing knowledge about the potential of AI at the service of the accounting profession. The importance of the subject is also highlighted by its contribution as an instrument of reflection in the preparation of training paths for current and future certified accountants.

Literature Review

In the 50s, Alan Turing argued how it was possible to define artificial intelligence, if we still continued to define intelligence. Assuming that man is an intelligent being, Turing proposed a test

to determine the capacity of a machine to exhibit an intelligent behaviour equal to a human being, or indistinguishable from it, and considered that if the machine was able to act in a way that it was not feasible to distinguish it from the behaviour of a human being, that machine had some kind of intelligence, and being a machine, the term artificial intelligence should be used, to differentiate it from human intelligence (Castro, 2017). Currently, artificial intelligence is defined more broadly as a computer program or software application that can mimic or simulate human behaviour and encompasses a range of interconnected technologies.

According to Emetaram and Uchime (2021) AI can be understood as the ability of a programmable device to perform activities associated with the human brain. These activities include knowledge and the ability to acquire it, the ability to interpret, judge, produce original thoughts, understand relationships and make choices. In this sense, process automation may or may not include AI, so they are two very different realities.

As Ng and Alarcon (2021) explain, AI is divided into a variety of subfields, including, but not limited to, machine reasoning, machine learning, deep learning, and natural language processing. With these technologies, computers can perform tasks in an intelligent way, which implies that they are not limited to acquiring and storing data, but that they have the ability to learn from experience, with the purpose of being able to process and make available, in a short period of time, information, which obviously has an impact on the exercise of the accounting profession (Ng & Alarcon, 2021).

If, on the one hand, technological development and digitization allow real-time updates and enhance the importance of financial information for decision-making, so often forgotten, on the other hand, the use of computers, automation systems, networked systems and the interconnectivity provided by the internet, drastically reduces the workload of accountants and the profession is now considered as having a high probability of having to be rethought in terms of skills and functions (Gulin et al., 2019).

In this context and to assess the possibility of automating tasks and processes, Oschinski and Wyonch (2017) considered it essential to distinguish between routine tasks that can be easily automated and non-routine tasks that are difficult to be performed by machines or software. These authors studied different professions and argued that with technology, the production or provision of services requires fewer workers, who can be employed elsewhere, who require critical thinking, a high level of creativity and qualifications or human contact, realities that will not be so easily automated soon. Routine tasks that do not require a high level of education and training and that require little human communication can easily be automated. The most developed AI segment for Accounting is counseling on a wide variety of issues (Emetaram & Uchime, 2021).

Stancheva-Todorova (2018) explains that rapid technological evolution, namely the so-called intelligent one, associated with a constant increase in data and information, imposes not only storage and processing challenges, but also information security and management of what is strategic for decision-making. The author considers that this new framework makes accountants demand an interdisciplinary approach and experience in information systems, statistics, computing, storage and protection tools and ethical issues related to the use of intelligent technology. In the same line of thought Melnyk et al. (2020) present several studies and analyze impacts and trends.

Methods

Given the nature and scope of the problem under study and the defined objectives, the option fell on a descriptive study, with a quantitative and a qualitative component, which configures a mixed method (Teddlie & Tashakkori, 2009).

The quantitative component will be supported by a questionnaire duly prepared for this purpose, based on theoretical foundations, directed at Certified Accountants. Given the expected size of the sample, closed questions will be privileged and whenever appropriate, Likert scales will be used. In order to increase the number of responses and avoid completion by non-certified accountants, the Chartered Accountants Organization (OCC) will be asked for its support in disseminating the study.

The questionnaire will be developed on an online platform and its link will be made available in a study presentation letter, which will be sent by email with a request for participation by the OCC.

The qualitative component will be supported by an interview guide and will have the purpose of collecting comments on the data obtained and treated statistically. All quantitative data collected will be anonymous, confidential and treated in aggregate, using the Statistical Package for the Social Sciences (SPSS) program.

The combination of the two approaches (mixed method) allows for a better understanding of the phenomenon under study, as both techniques, both quantitative and qualitative, have strengths and limitations, and their use satisfies different purposes. Thus, the advantage of integration is to take advantage of the best of each method, in a vision that generates synergy (Creswell, 2014).

Having as a pillar that humans and machines can work efficiently and effectively together, this research proposal is guided by the following starting question: How can the use of artificial intelligence in accounting change the functions of certified accountants?

Effectively, as defended by Stancheva-Todorova (2018), technology can replace accountants in some of their functions, and can perform them more accurately and quickly than humans. Since this issue is a real finding, there is a risk of an increase in the unemployment rate for the profession, if accountants do not develop new skills and abilities in line with the expected changes due to the use of Artificial Intelligence in Accounting (Shaffer et al., 2020).

Thus, any successful strategy for the future of the profession will involve embracing technological challenges and adapting to the new business environment and management requirements. However, it is a relatively new problem, which needs reflection and to know what the present and future needs are, it is crucial to carry out research studies.

Considering the nature of the problem under study, the general objective was to analyse the impact of the use of Artificial Intelligence in accounting on the functions of the accountant. The following specific objectives were defined:

- Characterize the applicability of AI in Accounting;
- Knowing the opinion of Certified Accountants in Portugal on the growing use of AI.
- Research trends, assess consequences and possible changes in the accountant's functions.

In terms of summarizing and reflecting on work already done, it should also be noted that the survey carried out by the Chartered Institute of Management Accountants (CIMA) in collaboration with the University of Bath in 2010. This study shows that, all over the world, accounting professionals are embracing new responsibilities and assuming a more active role in the context of strategic management (Stede & Malone, 2010).

The literature review will allow us to validate the construction of the research questionnaire and the possibility of comparing the results obtained, in this sense it is important to identify the contributions of similar studies.

Chester and Peprah (2021), for example, opted for a descriptive and correlational method, having developed a questionnaire, which was validated by five experts and randomly applied to seventy accounting graduates at a private university in the Philippines. Although the aim of the study was to verify the correspondence between technical skills and the first professional experience of graduates in accounting, it proved to be interesting, by identifying the skills and calling attention to the pertinence of investing in skills that will be useful within 5 or 10 years.

Ramlall and Ramlall (2014), in turn, prepared a questionnaire which was applied to three hundred and thirteen students attending undergraduate and graduate courses in Accounting at different universities in the United States, having concluded that both institutions and students value the acquisition of transversal skills, in line with the needs and requirements of the labor market.

Chua (2013) synthesized emerging trends in the business sphere and the potential impacts of technology on the accounting profession with a horizon of five to ten years. The author presents ten trends with a special impact on the accounting profession: mobility; cloud; social collaboration; provision of digital services; big data; payment systems; cybersecurity; robotics; augmented and

virtual reality and artificial intelligence, and it is still necessary to consider future technological developments in general terms.

Kroon, Alves and Martins (2021) opted for a methodological approach of systematic review on the implications of recent technological developments on the role and skills of the accountant, analysing forty articles published between 2015 and 2020. One of the contributions of this study is the identification of the types of emerging technologies that have an impact on the practice of the profession and inherently on the necessary skills. The authors point out that although professionals may feel some threat from new technologies, they generate very interesting opportunities.

Results

In the study carried out by Imene and Imhanzenobe (2020), a qualitative investigation was developed to highlight the relationship between the accounting profession and advances in technology. The authors identify digitization, preparation and timely presentation of financial reports, record keeping and data storage, transaction processing speed and accuracy as relevant. For these researchers, given technological advances such as cloud computing, AI, virtual reality and augmented reality, the accounting profession is evolving and lacks new skills to keep up with technological trends.

Mancini, Lombardi and Tavana (2021) analysed articles stored in reference databases between 2000 and 2020, using a qualitative methodology supported by a bibliographic review. Starting from a collection of ninety-six documents, fifty-one were selected for the study. The authors concluded that scientific knowledge about the relationship between intelligent technologies and accounting is still in its infancy, and in view of the results obtained, they confirm the need for more research to help accountants, accounting systems and processes and accounting tools to monitor and benefit from technological innovations.

Conclusion

A research conducted by Nielsen (2020) allowed an analysis of the State of the Art on the subject, having concluded that accountants can see their responsibilities grow with the use of AI and that they can work together with data managers recommending content to explore and then be interpreted in the light of the company's strategic objectives.

For this author, accountants must recognize that technological skills are no longer something that is “nice to have”, but something that is “mandatory to have” and that they must also be more proactive in acquiring and maintaining a set of skills suited to the challenges that lie ahead. He also considers that AI offers an unprecedented opportunity for accountants as it allows them to create competitive advantages through anticipation, efficiency and accuracy.

Some limitations of the study are related with the fact that is still an exploratory analysis, the final idea is to promote further research processes in order to consolidate the findings.

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EFFECT OF CONTRACT FARMING ON SMALLHOLDER FARMERS' GREEN LEAF TEA PRODUCTION IN TANZANIA

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Abstract. *This paper investigates the impact of contract farming on green leaf tea output among Tanzanian smallholder farmers. Data from 393 growers from Mbeya and Njombe regions were collected in a cross-sectional survey and analysed descriptively using IBM Statistics Version 26. A multiple linear regression model was used to test the null hypothesis. The findings show that contract farming engagement (β=140.102; P=0.058) positively impact production. Moreover, household size (β=2.268; P=0.903) and gender (β=294.978; P=0.000) positively impact green leaf tea production. Besides, age (β=-2.719), education (β=-3171.868), and farm size (β=-20.866) all negatively impact production, but education only was statistically significant at P=0.002. We conclude that, contract farming has a favourable impact on green leaf tea production and suggests recognising its potential for farmers' growth. Besides, its nuanced importance and borderline P value (0.058) prompts further research on contract design, capacity-building, and market dynamics. Additionally, this paper highlights nuanced effects of farmer attributes. While household size and gender positively influences production, age, education, and larger farms negatively impact it. A comprehensive approach to tea production optimization, considering age-appropriate practices, education-specific interventions, and efficient farm management, is crucial. Further investigation into the combined effects of age, education, and gender is suggested for holistic insights.*

Keywords: *Contract Farming, Smallholder Farmers, Green Leaf Tea Production in Tanzania.*

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Introduction

Tea (Camellia sinensis) has the distinction of being the world's most ancient beverage, having a roughly 5,000-year history, and is the most extensively consumed beverage in the world after water, with possible health benefits (Andra-Warner, 2022). The global tea sector has risen rapidly in recent decades, with a significant increase in global consumers. In 2022, global consumption was approximately 6.7 billion kilogrammes (Kg), with a forecast increase to approximately 7.4 billion Kg by 2025 (Statista, 2023). The youth group, in particular, has significantly increased their tea intake, contributing to this boom. The tea industry is critical to socioeconomic growth, providing major employment and cash to disadvantaged families worldwide. Tea production employs over 13 million people worldwide and has an annual worth of more than $18 billion (FAO, 2023; Debnath et al., 2021).

Tea considerably enhances export income, with global output reaching $17 billion and trade valued at more than $9.5 billion. Smallholders account for 60% of global production most of which are women, and they play an important role in rural employment, which improves household food security and nutrition (FAO, 2023; FAO, 2022). Tea is produced in over 15 countries, and annual export demand has increased by about 0.5% in the recent decade (Debnath et al., 2021). Increased tea supply from various tea growing countries is expected to drive 1.4% growth in black tea exports during the next ten years (Statista, 2023). Globally, an annual tea output of 6,497,443 tonnes is realised. China is the world's leading tea producer, producing 2,791,837 tons annually, with India close behind at 1,390,080 tons. Particularly, China and India account for nearly 60% of global tea output. Kenya comes in third place with an annual tea production of 458,850 tons, followed by Sri Lanka (300,120 tons), Vietnam (269,281), Turkey (261,000), Indonesia (137,803) and Myanmar (132,494) (AtlasBig, 2023).

Tanzania is within 15 countries producing tea across the globe. Tea accounted for 5.8% of overall cash crop production of 0.639 million tonnes in 2018/19, ranking as the fifth most produced cash crop in Tanzania. Tea production was preceded by cashew nuts (35.2%), seed cotton (34.9%), coffee (10.4%), tobacco (8.6%), and sisal (5%) (TanzaniaInvest, 2023). Tea plays an important role in Tanzania as a substantial cash crop, employing over 50,000 people in tea farms and processing plants, with an indirect impact of approximately 2 million people. Furthermore, the tea production includes about 32,000 smallholder farmers. Tanzania's government additionally earns approximately 45 million US dollars each year from the tea business (United Republic of Tanzania (URT), 2023; Dogeje et al., 2023).

Tanzanian tea production is divided into two models: large-scale growers, primarily tea processor estates, and smallholder farmers. Tanzania's total tea growing area is 23,805 hectares, with approximately 51 percent dedicated for large-scale cultivators and nearly 49 percent designated for smallholder farmers (AtlasBig, 2023; URT, 2023).

Smallholders farmers are regarded as farmers who cultivate less than 2 hectares (5 acres) of land for agricultural cultivation, animal husbandry, or fish farming (Knight, 2022). Smallholder farmers are commonly classified as a family-based farmer since they frequently rely on the labour of family members for production and normally keep a portion of their produce for personal use. These farmers, includes those who own and do not own the land on which they farm. Smallholder farmers in underdeveloped countries typically run a family-owned firm on a modest scale, managing up to 10 hectares (24 acres) (Knight, 2022). Despite possessing relatively small land sizes, smallholder farmers plays a crucial role in world food supply chain. It is argued that smallholder farmers produce around 35% of world food output and 80% of food supply in Sub-Saharan Africa and Asia (Lowder et al., 2021; FAO, 2012). In Tanzania, smallholder farmers dominate the agricultural domain, caring to 5.1 million hectares each year, out of which food crops accounts for about 85 percent (TanzaniaInvest, 2016).

Even though smallholder farmers contribute significantly to the world food output and are crucial to socio-economic development of their respective countries, farmers are confronted with several challenges that humper their performance in terms of production efficiency and overall livelihood. For instance, even though, tea is the primary source of income for many underprivileged households, particularly in low-income countries, they face several challenges, including limited extension support, limited market access, low farm gate pricing, limited technology and financing access, and difficulties in meeting quality standards (FAO, 2023). This observation suggest that, these challenges, such as limited access to access to extension services are likely to cause low production, overall smallholder tea farmers performance and their livelihood. Smallholder tea growers in Tanzania face several challenges. These include limited input availability, insufficient access to extension support, and tiny land holdings, all of which contribute to lower production amongst smallholder tea farmers. It is estimated that, their average green leaf tea production ranges between, 2 and 3 tons per acre, which is about 2.5 tons per acre annually. This production average is about 50% lower than that of the tea processing estates, who achieve around 4.3 tons per acre per annum (IDH, 2021a; IDH, 2021b).

These challenges facing smallholder tea farmers underscore the importance of being resolved to improve smallholder tea performance, including improved production which contribute to improved income through, increased sales volumes. Resolving these challenges ensures that the tea sector benefits smallholder farmers and rural communities both in the short and long term (FAO, 2023). Contract farming, a sort of vertical integration, is considered to address these identified constraints and improve crop yield. Saroj et al. (2023), for example, discovered that contract farming increased the performance of wheat farmers in India by increasing access to production technologies and high-quality agricultural inputs. Likewise, Swain (2016) discovered that contract farmers could achieve higher production and efficiency by cultivating contract crops rather than non-contract crops in India.

Similarly, a study by Mpeta (2015) on the influence of contract farming on sunflower farmers' production in Tanzania discovered that contract farmers had more production per acre than non-contract farmers. Moreover, the URT's (2016) research on contract farming systems in Tanzania found that contract farming has a beneficial impact on sugarcane and tobacco production but not cotton. The favourable impact on sugarcane and tobacco production demonstrates that contract farming can boost crop yield and profitability by improving coordination and access to resources. However, the lack of a positive impact on cotton production underlines the complexities of contract farming's consequences, demonstrating that its success may be dependent on crop-specific characteristics, contract terms and market dynamics.

While the literature recognise the potential benefits of contract farming on improving smallholder crop performance, particularly production, there is limited literature on its impact on green leaf tea production among Tanzanian smallholder farmers. Moreover, the nuanced effects of contract farming on various crops suggest that contract farming might have crop-specific influence, necessitating a further focused inquiry. This study intends to fill this knowledge gap by examining how contract farming affects green leaf tea output among Tanzanian smallholders. It specifically test the null hypothesis (Ho) that contract farming does not impact green leaf tea production for smallholder tea farmers.

Literature Review

Production may be defined as obtaining the highest possible product output from a given input level (Mpeta, 2015). In the context of agriculture this may entail crop cultivation, and livestock keeping. It include activities such as planting, farm management, pest control, and harvesting. It also includes animal husbandry and breeding. The literature indicate that production is mainly measured in terms of productivity and efficiency interchangeably (Coelli et al., 2005) Neoclassical economic theory is the foundation for understanding agricultural production as a resource allocation process to maximise output given restricted inputs. The theory's emphasis on supply and demand interactions and elucidates how producers strive to optimise resource utilisation, achieve cost-effective output, and respond to market signals for various agricultural goods. Production functions, such as the Cobb-Douglas and Constant Elasticity of Substitution (CES) functions, describe the relationship between inputs and outputs, providing insight into production efficiency and technological development (Orlando, 2023; Wang & Fu, 2013).

Agricultural activities employ around 25% of the worldwide workforce. In many low-to-middle-income countries, agriculture employs a sizable proportion of the workforce and serves as their primary source of income. Besides, there are significant differences in incomes and production amongst smallholder farmers across the world. In different countries, the income ranges from negative to $2,000 or more, demonstrating that some smallholder farmers are running deficits, resulting in negative income outcomes (Roser, 2023). As income is the function of production volumes and prices, this indicate that, low production levels contributes to low income amongst smallholder farmers.

Delving into the tea subsector, low production and productivity is not an exception to the smallholder tea farmers across the globe. Literature indicate that smallholder tea farmers have relatively low green leaf tea out output due to various reasons, including limited access to inputs,

technology. For example, Hasan et al. (2023) study in China discovered that green leaf tea productivity is declining due to global warming and climate change, as well as inadequate irrigation. Likewise, a study by Rajeswar et al. (2017) discovered that smallholder tea growers in North East India have low productivity due to variables such as financial problems, power concerns, labour challenges, inadequate communication, higher pollution costs, and restricted transportation subsidies. Similarly, Perera's (2014) research identified impediments that limit the involvement of tea smallholders in Sri Lank. These include low production, poor business practises, insufficient expertise of tea farming, and limited service access. Moreover, a study by Hilal and Mubarak (2013) found that some farmers in Sir Lank have lower green leaf tea output because of older bushes and adverse weather condition.

According to a study conducted by Ngeno (2023) in Kenya, smallholder tea producers have low productivity due to technical inefficiency and a technological gap. Connectedly, according to Muzira et al. (2023), while tea output in Uganda has increased in Uganda, overall productivity and quality are still relatively poor since smallholder farmers are still growing volunteer tea seedlings. Similarly, Bitama et al. (2020) discovered that smallholder tea farmer in Burundi have poorer green leaf tea productivity than state-owned estates. Factors contributing to this disparity include limited education, family labour availability, high costs of hired labour, tea bush characteristics, and local customs. These findings also suggest that limited mechanisation exacerbate inefficiency in the entire tea production system amongst smallholders in Burundi. These results also indicate that inadequate mechanisation worsens inefficiencies in the complete tea production process among Burundian smallholders because of labour intensive nature of tea farming.

As study by Courbois et al. (2022) discovered that smallholder tea farmer have lower yearly yields per hectare than private estates, with values like fewer than 9 tonnes compared to 2,500 tonnes on estates. This gap is attributable to insufficient inputs, notably a lack of fertilisers, quality seedlings, pest management, and irrigation. In Tanzania, IDH studies (2021a; 2021b) found that smallholder tea producers have lower productivity due to a variety of variables. These include difficulties procuring inputs such as fertilisers and pesticides, limited access to extension services, credit constraints, and a strong reliance on rainfall. Smallholder tea farmers in Tanzania produce roughly between 2 ton and 3 tons of green leaf tea per acre per year, which is close to 50% less than tea processing estates, which produce approximately 4.3 ton per acre per year (IDH, 2021a; IDH, 2021b).

Evidence from the reviewed literature suggests that smallholder tea producers in various parts of the world are confronted with low productivity due to reasons like climate change, limited resources, inappropriate practises, and labour concerns, which effect green leaf tea yield and quality. Theoretically, contract farming can potentially address these challenges, which are mostly associated with spot market failures. Through contract farming, smallholders farmers can have access to resources, technology, and knowledge through structured arrangements with agribusinesses, resulting in enhanced farming practises, higher yields, and higher quality. Contract farming also provides stable markets and greater earning potential (Liang et al., 2023; Luh, 2020; Mpeta, 2015; URT, 2016).

A study by Saroj et al. (2023) in Inida, applied the data envelopment analysis and endogenous switching regression model on cross-sectional survey data from 754 wheat farmers, it founds that contract farming adopters are significantly more efficient than non- adopters. The same was attributed to improved access to quality inputs and production technology. Relatedly, in study by Swain (2016) in India used Heckman sample selection model was used to estimate the productivity differences between contract and non-contract farmers and stochastic production frontier was used to measure the technical efficiency. The results have indicated that contract farmers could achieve higher productivity and more efficiency by growing contract crop compared to non-contract crop.

A study by Mazhar et al. (2022) by using Stochastic Frontier Production (SFP) and Propensity Score Matching (PSM) revealed a significant and positive correlation between engagement in contract farming and technical efficiency of rice farmers in Pakistan. Furthermore,

land size, seed, and machinery expenses were identified as the principal inputs influencing the production. Similarly, a research by Rondhi et al. (2023) by using the same methodology found that contract farming influence technical efficiency of the chicken farmers. Connectedly, other factors contributing to smallholders performance, include age, farming experience, and education level (Singh, 2020; Kiet et al., 2020; Ali, 2019; Ngango & Kim, 2019).

In a study undertaken by Bidzakin et al. (2020) in Ghana, the results of the endogenous treatment effect regression model show that contract farming improves rice farmers' technical, allocative, and economic efficiency in Ghana. Moreover, farm size and contract farming were identified as shared characteristics that positively influenced the various efficiency indicators. Furthermore, the farmer's age, level of education, and the availability of family labour were indicated as favourable impacts on farmers' participation in contract farming. In Tanzania, the study undertake by Marwa and Manda (2022) by using endogenous switching regression (ESR) and PSM revealed that contract farming contribute to improved beans yield, income from beans and household income. Similarly, as this study focused on youth, these results may imply that age is critical to farmers performance. Moreover, the study undertaken by URT (2016) on contract farming systems in Tanzania found that contract farming has a positive impact on the production of sugarcane and tobacco, but its effect on cotton production was not observed. This imply that contract farming can enhance crop yield and profitability through better coordination and improved resource access in sugarcane and tobacco cultivation. However, it impact on cotton productivity is contested.

Despite the fact that existing literature recognises the potential benefits of contract farming in enhancing smallholder crop output, there is a lack of rigorous research on its effects on green leaf tea production among Tanzanian smallholders. Furthermore, the varied effects reported in diverse crops show that contract farming's influence make its effect to various crops unconclusive. This may suggest that, contract farming effect on productivity may be crop specific, necessitating more crop specific research. The purpose of this research is to fill this knowledge gap by evaluating the influence of contract farming on green leaf tea yield among Tanzanian smallholders. It explicitly explores the hypothesis that contract farming has no effect on smallholder tea producers' green leaf tea yield.

Methods

Research Design

The study employed a descriptive research design to evaluate how contract engagement affect smallholder farmers' green leaf tea production in Tanzania. The rationale for employing this study design was to offer a firm foundation of knowledge about a subject, investigate its qualities, and lay the platform for deeper inquiries. It is especially useful when the goal is to describe a scenario, occurrence, or relationship in a comprehensive and systematic manner (Elman, 2022).

Data Collection and Processing

This study used primary data from a cross-sectional survey of 393 smallholder tea growers in 37 villages across three districts in mainland Tanzania: Rungwe and Busokelo in the Mbeya region, and Njombe District Council in the Njombe region. Participants in this study were chosen based on their involvement in the green leaf tea market during the 2022 tea producing season. To ensure representation, participants were separated into two groups: contract participants (233 farmers, 59% of the sample) and non-participants (160 farmers, 41% of the sample). The sample was randomly drawn from distinct clusters within the 37 communities.

The dependent variable in this study is measured using green leaf tea production per acre in Kilograms (Kg). In contrast, the independent variable used is farmers' participation in vertical integration alongside other variables. Farmers' participation in vertical integration is represented as a dichotomous variable, coded as 1 for participation and 0 for non-participation. Other variables, included in a model are respondent's gender, age, household size and land size, the measurement of which are shown in Table 1.

Table 1
Variables Measurement

Variable	Indicator	Measurement	Number of Indicators
Depependend	Green leaf tea production outcome	Green leaf tea production per acre (Kg/acre) (scale variable)	1
Independent	Contract Farming Engagement (CFE)	Dichotomous (1=Engaged; 2=Otherwise) (categorical variable (nominal))	6
	Gender of respondent (GEN)	Nominal (1=Male; 0=Female/Otherwise)	
	Age of respondent of respondent (AGE)	Continous	
	Eduction of respondent (EDU)	Nominal (1=Completed primary school; 0=Otherwise)	
	Household of size of respondents (HHS)	Number of people in the respondent's househol (continous variable)	
	Tea land size of respondents (LS)	Land planted with tea in acres (continous variable)	
Total number of variables			**7**

Data Analysis

The collected data was cleaned in excel and imported in SPSS IBM Statistics for Mac Version 26 for analysis. Descriptive analysis of independent and dependent variables was performed using measures of central tendency. Moreover, independent sample t-test was done to test the association between production between smallholder farmers' engaged and those engaged to established whether there is statistically significant different between those engaged in contract farming and those who are not engaged in contract farming. Furthermore, a multiple linear regression model was used to examine the impact of contract farming engagement, along with farmer characteristics (gender, age, education, household size, and land size), on smallholder farmers' green leaf tea productivity in Tanzania. The significance level of 0.05 was used to accept or reject null hypotheses. Before undertaking data analysis, specific statistical tests were conducted to ensure the validity and reliability of the data. Furthermore, the vital assumptions of the multiple linear regression model, including tests for autocorrelation, homoscedasticity, collinearity, and the normal distribution of errors, were examined and found to be satisfied. Check of significant outliers was checked whereby 22 observations which had a Cook vale exceeding 0.01 which is equivalent to sample size divided by 4 (393/4) were removed from the model (Cook & Beckman, 2006). In this regard the regression model was run by using 371 observations.

Structural Equation

This study used the multiple linear regression model with the aforementioned variables to examine how contract farming engagement, in combination with various farmer attributes, affects green leaf tea production among Tanzanian smallholder farmers. The methodical estimation of the model are summarised below.

$$GP_k = \beta_0 + \beta_k X_k + \epsilon \quad (1)$$

Whereby:

GP_k = Green leaf tea production for the kth farmer

β_0 = Intercept representing value of GP when all independent variables are set to zero

X_k =Coefficients indicate how GP changes with a one-unit shift in the predictor variable of interest, keeping other variables unchanged

ϵ = error term

By incorporating the designated independent variables listed in Table 2, Equation 1 can be reformulated structurally into equation two as shown below.

$$GP_k = \beta_0 + \beta_1(CFE)_k + \beta_2(GEN)_k + \beta_3(AGE)_k + \beta_4(EDU)_k + \beta_5(HHS)_k + \beta_6(LS)_k + \epsilon \quad (2)$$

Whereby:
CFE=Contract farming engagement;
GEN=Gender of respondents;
AGE=Age of respondents;
EDU= Education of respondents;
HHS=Household size of respondents;
LS= Land size of respondents

Results

Descriptive Results

The proportion of farmers engaged in contract farming was higher (70%) compared to those not engaged in contract farming (30%). The study results show that, majority of the respondent were men (57%) compared to women (43%). Besides, the proportion men (63%) are engaged in contract farming was higher than those not in contract farming (43%). In contrast, the proportion of women (37%) engaged in contract farming was lower compared to those not engaged (57%) (Table 2).

Table 2
Respondents Disaggregated by Contract Farming Engagement and Gender

Status of Engagement in Contract Farming (ECF)	n / %	Sex		Total
		Female	Male	
Not ECF	n	66	50	116
	%	57	43	100
ECF	n	102	175	277
	%	37	63	100
Total	**n**	**168**	**225**	**393**
	%	**43%**	**57**	**100**

This finding suggests that there are gender-based difference in participation in contract farming, with a higher percentage of men being involved compared to women. On the other hand, the average of those engaged in contract farming was slightly lower (47 years) compared to those not engaged in contract farming (48 years) but this difference was not statistically significant at the at 5 percent precision level. This finding suggest that there is no significant age difference in the two groups however, the same indicate an aging population. The aging population of the smallholder tea farmers is in line with several studies reservations which show that, youth engagement in agriculture is relatively low because it is perceived as less prestigious and less remunerative (FAO, 2014; CARE International in Tanzania, 2023). The research outcomes indicate that a substantial proportion (90%) of the examined small-scale tea farmers had received primary school education, while a smaller fraction (10%) had not finished primary school. On the other hand, the average household size of survey respondents is 5.2 individuals, surpassing the national average of 4.6 individuals (URT, 2019). The average farm size of the surveyed smallholder tea farmers is 1.5 acres of tea farms.

The independent variable in the study was measured in terms of production per acre, which averaged around 3,308 kg per acre per annum. The median and mode were 3,500 kg/acre/year and 4,000 kg/acre/annum, respectively. Smallholder farmers engaged in contracting showed higher average production (3,375 kg/acre/year) compared to non-participants (3,150 kg/acre/year). This difference in production per acre was statistically significant at a 5 percent precision level. This finding implies that the disparity between contract farming participants and non-participants is not

coincidental; rather, it is likely influenced by the effect of farmers' engagement in contract farming. This is in line with theoretical expectations and other previous studies which indicate that smallholder farmers engagement, influence crops yield (Liang et al., 2023; Luh, 2020; Mpeta, 2015; URT, 2016). To establish causal effect between smallholder farmers' engagement and production, a multiple linear regression model is employed in the subsequent paragraphs.

Regression Results

The regression results are shown in Table 3. Description of the regression results on the influence of contract farming engagement on green leaf production, along with select farmer characteristics are provides in the subsequent paragraphs.

Table 3
Multiple Liner Regression Results

Model (a)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	3566.066	227.721		15.66	0.000	3118.252	4013.881
Contract farming engagement	140.102	73.772	0.098	1.899	0.058**	-4.971	285.176
Gender	294.868	68.372	0.227	4.313	0.000*	160.414	429.322
Age	-2.719	3.169	-0.046	-0.858	0.391	-8.95	3.512
Education	-371.457	118.019	-0.165	-3.147	0.002*	-603.542	-139.372
Household size	2.268	18.635	0.006	0.122	0.903	-34.377	38.913
Farm size	-20.866	41.795	-0.026	-0.499	0.618	-103.057	61.325
(a) Dependent Variable: Production/Acre; Independent variables (Constant), CFP status, Age, Farm size, Education, Sex, Household size (b) Adjusted R Square=0.078; F=6.211; df2=364; Sig. F Change=0.000; *Independent variables with a significance level below P<0.05; **Independent variables with a significance level below P<0.01							

Effect of Contract Farming Engagement on Green Leaf Tea Production

The findings indicate that there is a favourable positive impact (β = 140.102) resulting from farmers' participation in contract farming on the production of green leaf tea. Besides, the effect was not statistically significant at P=0.05 but it is at P=0.1 because the P value is 0.058. The analytical findings demonstrate a significant and relevant influence, denoted by the coefficient of 140.102, resulting from farmers' participation in contract farming in the field of green leaf tea production. The positive coefficient value, 140.102, implies that each incremental rise in farmers' engagement in contract farming correlates to a proportional raise of around 140.102 units in the domain of green leaf tea production.

Effect of Farmer Attributes on Green Leaf Tea Production

Regression results show a substantial positive influence (β=294.978; P=0.000) between gender and green leaf tea production among Tanzanian smallholder farmers. This finding suggest a strong evidence of the impact of gender on tea production in the context of Tanzanian tea smallholder farmers. Connectedly, the household size of tea smallholder farmers (β=2.268) favourably increases green leaf tea production, although it lacks statistical significance at a 5% precision level (P=0.903). This finding suggest that, despite the lack of statistical significance, the observed trend of a positive influence of household size on green leaf tea production provides insight into the potential relevance of this variable in the context of smallholder farmers' green leaf tea production.

In contrast, age, level of education, and size of farm are negatively associated with green leaf tea production. The specific regression coefficients are age (β = -2.719), level of education (β = -3171.868), and size of the tea farm (β = -20.866), respectively. Besides, in these variables it is the level of education only which was statistically significant at 5% precision level threshold (P=0.002). These finding implies that one unit increase in one of these variables (age, level of education, and

farm size) while holding other factors constant, leads to a decrease in the green leaf tea production. Moreover, the relationship observed in these variables shed light on the possible negative effects of age, education, and farm size on tea output, with education being the most statistically significant driver.

Discussion

The significant positive relationship between smallholder farmers contract engagement and green leaf production implies that when farmers participate in contract farming arrangements, their levels of green leaf tea yield improve noticeably and favourably. This entails that the null hypothesis is not supported instead the alternative hypothesis is considered. This findings aligns with other studies which indicate that participation in contract farming positively influence smallholder farmers productivity (Saroj et al., 2023; Bidzakin et al., 2020; Marwa & Manda, 2022; URT, 2016). Coherence of this study with results from others studies underscores that contract farming plays a substantial influence in increasing green leaf tea productivity among the farmers. It further imply that, formalised agreements and cooperation made through contract farming arrangements are favourably influencing the cultivation, management, and overall output of green leaf tea. The observed effect is likely due contract farmers access to resources, knowledge, and market opportunities, resulting in a significant boost in green leaf tea production capacity.

On the farmer attributes, a significant positive influence of gender and green leaf tea production among Tanzanian smallholder farmers suggests that, gender has a critical role in impacting green leaf tea production positively. This is most likely associated to a variety of roles and skills amongst gender, resource allocation decisions, and knowledge sharing. Similarly, women's participation is likely to improve labour force, crop care, and green leaf output by harnessing their unique insights and contributions. Likewise, the household size of tea smallholder farmers positively increases green leaf tea production. These findings resonates with other studies which indicate that some farmer characteristics, including gender and household size contributes to improved farmers performance (Mazhar et al., 2022; Singh, 2020; Kiet et al., 2020; Ali, 2019; Ngango & Kim, 2019).

Besides, lack of statistical significance on household size may entail that, the observed increase in tea production based on household size may not be strong enough to confidently conclude that it is a significant factor influencing green tea production in this study. In this regard, further studies, may explore if this factor plays a meaningful role in influencing smallholder farmers green leaf production.

The negative effect of age, level of education, and size of tea farm on green leaf production, collectively offer insights into the potential interplay between age, education, and farm size in influencing tea production, underscoring the pronounced role of education as a determinant of significance in this relationship. However, the level of education exerts a statistically significant negative impact on green leaf production within the context of the study, compared to age, and farm size. The negative effect of these variables on green leaf tea production contradicts other scholars who posits that select farmer attributes, including age, education level of smallholder farmers and farm size positively contributes to farmers efficiency (Singh, 2020; Mazhar et al., 2022; Ngango & Kim, 2019). Their position implies that certain characteristics, such as age, education level, and farm size, can improve farmers' tea production efficiency. These characteristics enable farmers to make better decisions, implement effective practises, and make the best use of resources, resulting in enhanced tea production outcomes.

Delving further in the findings of this study, the negative influence of age on green leaf tea production, show that as smallholder tea farmers get older, their green leaf tea production. This could be due to various factors, including; decreases physical capacity or energy levels, or a shift in concentration to other activities. Older farmers may have difficulty managing the labour-intensive duties required for tea cultivation, resulting in a decline in output. Similarly, the significant negative impact between education level and green leaf tea production implies that as farmers' education levels improve, their green leaf tea production drops. This conclusion may appear counterintuitive

but it could be due to educated farmers diversifying their activities or engage in other agricultural and non-agricultural activities, including home gardening, crafting, and running small shops.

Additionally, increased education may increase awareness of the obstacles in tea production, forcing producers to alter their attention or devote less effort. Moreover, the negative effect of tea farm size on green leaf tea production shows that larger tea farms produce less green leaf tea. This could mean that owing large tea farms could results into the management challenges that come with larger farms, such as difficulties in properly monitoring and maintaining the entire tea farm, for example, the process of preparing the green leaf tea plucking table. Furthermore, larger farms may necessitate more labour, resulting in insufficient resources being allocated to each plot, ultimately decreasing production

Conclusion

This study concludes that smallholder farmers' engagement in contract farming positively, influence green leaf tea production. We recommend that policy makers, tea processing companies, and agricultural extension agencies should recognise contract farming's potential for increasing green leaf tea output. Focusing on transparent and equitable contracts are likely to boost the improved production. Given the subtle significance at P=0.1 and the borderline P value (0.058), further research is recommended to look into the reasons driving this observation like, market dynamics, contract design and capacity-building. Relatedly, this study found a nuanced effect amongst farmer characteristics on green leaf tea production. These individual farmer characteristics add to the knowledge among the farmers in the study. On farmer characteristics we concluded that, while gender is associated with increased green leaf tea production, age, better education levels, and larger tea farms are associated with decreasing green leaf tea production. These consequences highlight the importance of having a comprehensive approach to optimising tea production, including aspects such as age-appropriate practises, education-specific interventions, and ways for efficiently managing larger tea. More research could be conducted to investigate the interactions between farmer characteristics (age, education, and gender) and their combined impact on green leaf tea production in Tanzania and beyond. By analysing these aspects collectively, this holistic approach may give insights for optimising productivity.

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MANAGING THE REPUTATIONAL RISK OF AN ENTERPRISE IN THE ECONOMIC SECURITY SYSTEM

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Abstract. *The paper addresses the actual scientific and practical problem of deepening the theoretical foundations of managing an enterprise's reputation risks in the system of its economic security and developing practical recommendations for assessing the impact of an entity's reputation risks on its economic security. The existence of various approaches to the determination of reputational risk has led to the emergence of a considerable number of different in the methodological and instrumental aspect of methods of its assessment, which are not systematic and complex in nature. Existing methods of quantitative assessment of reputational risk can be divided into two groups: a priori - based on theoretical provisions and formulate requirements regarding the results of management decisions; empirical - based on the study of past events and the processing of information, including statistical one. An analysis of general approaches to risk assessment has shown that the lack of consensus on assessing the reputational risk of an enterprise makes it impossible to manage it. Therefore, the proposed methodical tool for assessing the reputational risk of the enterprise, based on the principles of system-functional and process approaches and outlines the synergistic contours of the influence of risk-forming factors in view of the target groups of stakeholders in the reputational matrix of the enterprise, allows the owner to determine and serve as the basis for building a given risk management system at the enterprise.*

Keywords: *reputational risk, economic security, stakeholder groups, management decision matrix.*

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Introduction

The dynamic changes of the world economic system and their direct impact on the activity of enterprises significantly increase the uncertainty of their functioning, which leads to the emergence of new risks that have different sources of formation and forms of manifestation. In the 21st century, one of the main and most significant risks that directly affects the effective functioning and level of capitalization of enterprises is the reputational risk, the appearance of which is due to the active influence on the activities of enterprises of different groups of stakeholders. That is why the formation of a positive image and good reputation are decisive in the market environment, providing the company with a high public rating and financial success.

Qualitative changes occurring in economic relations, contradictory development of the country's economy have led to the transformation of both the subject area itself, as well as changes in the content and ways of ensuring the economic security of the enterprise. That is why, under market conditions, the problem of assessing and managing the reputational risks of the enterprise becomes independent theoretical and applied nature as an important part of ensuring the economic security of the enterprise.

An inevitable part of the operation of any modern enterprise is the risk that it faces at different stages of its activity in solving both current and long-term problems related to its production, commercial and other activities. That is why the problem of risk assessment and management acquires independent theoretical and applied character as an important part of management theory and practice.

Literature Review

In the scientific literature, the problems of many authors are devoted to the study of methods, mechanisms and instruments for ensuring the economic security of the enterprise, as well as the issues of managing its intangible assets, including reputation, reputational risks and crisis management.

In today's harsh market conditions, businesses are directly dependent on society and more precisely on the degree of trust and loyalty to them from different groups of the public (stakeholders, target audience) - these are the entities of perception of the enterprise, which it encounters in the process of its implementation, and activities and which significantly affect the achievement of the enterprise's goals and its operation as a whole (Arora, MP, & Lodhia, S. (2017)). In the relations with some stakeholders, short-term interactions are important for the enterprise and long-term relationships with others.

The most important stakeholder groups are those whose contribution (work, capital, resources, purchasing power, dissemination of information about the enterprise, etc.) is the basis of success or collapse of the enterprise: staff (including enterprise management), consumers, shareholders and investors, business partners, competitors, media, authorities (officials and legislators), representatives of the expert community, NGOs (Pineiro-Chousa, J., Vizcaíno-González, M., López-Cabarcos, M., & Romero-Castro, N. (2017)). In this regard, great attention has been paid to image and reputation, because under the current conditions, it is positive image and good reputation that are decisive in the market environment, providing the company with high public rating and financial success. Moreover, it is reputation:

is a real and substantial non-monetary intangible asset of an enterprise that contributes to changing its value (Christopher, M., Mena, C., & Van Hoek, R. (2018));

underlies the choice of the target audience of the enterprise (Eckert, C. (2017), Eckert, C., & Gatzert, N. (2017));

is the key to ensuring stability, successful functioning and dynamic development in a volatile, volatile market environment (Hogarth, K., Hutchinson, M., & Scaife, W. (2018)).

A common approach to reputational risks is the risk of loss. In this case, reputation risk management means the creation of a preventive system that works at the stage of negative tendencies, as well as a system of rapid response and aimed at minimizing risk. Losses due to the fact that reputational risk does not receive timely control measures can be attributed to reputational, including - customer outflows, litigation, rising costs of purchasing raw materials and equipment, attracting funding sources, etc.

Thus, reputational risks arise when the expectations that an enterprise cannot meet can be increased. In this regard, reputational risk is relevant to any enterprise, regardless of its industry affiliation, legal form and ownership (Honey, G. (2017)). Hence the need to identify, analyze and further manage this enterprise risk.

However, despite the particular relevance and specificity of reputational risk, a number of fundamentally significant theoretical and methodological issues for managing this risk have not yet been fully addressed (Hopkin, P. (2018)). These reasons lead to the need to solve a set of tasks for

establishing, identifying, assessing the reputational risks of an enterprise and developing tools to determine their impact on its economic security (Hopkinson, M. (2017)).

The relevance and relevance of the issues outlined the choice of topic, determined the purpose, objectives, object, subject and logic of the study.

The purpose of the work is to substantiate and deepen theoretical and methodological approaches to managing the reputational risks of an enterprise in the system of its economic security, as well as to develop practical recommendations for assessing the impact of the entity's reputational risks on its economic security.

In order to achieve this goal, the following scientific and applied tasks have been set and solved: to summarize the theoretical principles of determining the reputational risks of an enterprise in the system of its economic security; develop methodological tools for assessing the reputational risks of the enterprise; to assess the reputation risks and economic security of enterprises; to determine the technology of assessing the impact of the reputational risks of the enterprise on the basis of system-functional and process approaches.

Methods

The basis of the research is the system of general scientific and special methods of scientific knowledge, as well as a set of epistemological approaches, the use of which is determined by the stated purpose and objectives of the research. When considering the basic concepts and categories that form the theoretical basis of the study, the methods of theoretical generalization, analogies and abstract-logical methods were used. The paper uses a systematic approach and structural-logical analysis (in constructing a logical structure of work), methods of expert assessments (in assessing the reputational risks of the enterprise; study the values of external and internal stakeholders of the enterprise), methods of analogy (in formulating a hypothesis for the existence of the influence of reputational risks of the enterprise on its economic security), methods of probability theory and mathematical statistics (when assessing the impact of a company's reputational risks on its economic security), methods of finance analysis (in assessing the economic security of the enterprise), logical analysis in forming the verbal model of the program of management measures.

Results

First, reputation affects the level of investment attractiveness of an enterprise, its competitiveness, its financial stability, since the relationship of the enterprise with investors, partners and consumers depend on the attitude of the latter to the enterprise.

Investment attractiveness, in turn, can directly affect economic growth factors. For example, the improvement of the quality of material and technical base is due to investments in fixed assets; technology renewal and, consequently, the intensification of economic growth - because of investments in the scientific and technical potential of the enterprise.

A detailed division of reputational risk factors that affect the economic security of the enterprise is given in Table 1.

Therefore, the enterprise should be in a state of economic security, taking into account a set of factors, both external and internal, aimed at ensuring the stable functioning of the enterprise, preventing the effects of external and internal threats, and, above all, which increase the competitiveness and investment attractiveness of the enterprise. All these factors relate to different sections of society, which sometimes do not intersect, but meeting the needs of all types of external and internal counterparties by fulfilling all the factors of economic security of an enterprise, brings the economic system into a state of stable growth, which cannot but affect positively state of economic security of the enterprise.

Based on the research, it can be stated that the reputational risks of the company is a factor that in some way affects its economic security.

However, so far, the presence of such influence is largely assumed to be hypothetical. As you know, the possibilities of further intensification of the use of tangible assets of the enterprise are coming to naught, so companies are looking for other ways to achieve optimal performance of their activities in the market, protection against external and internal threats (especially in times of

crisis), to achieve the intensity of sustainable development, to achieve the state of economic security, etc. Largely, the ability of an enterprise to succeed in the market depends on the ability of the enterprise to use its advantages and achievements.

Table 1

Reputational risk-forming factors for the economic security of the enterprise

(copyright development)

Inner factors	Outer factors
Non-observance of the enterprise and its employees by the legislation, constituent and internal documents of the enterprise, customs of business turnover, legal norms, principles of professional ethics	Occurrence of conflicts of interest with shareholders, clients, partners, media, other interested parties
Deficiencies of personnel policy in the selection and placement of personnel, incompetence or irresponsible actions of staff and management bodies; labor conflicts	Negative assessment of the activity of the company, expressed by external auditing organizations, authorities or controlling bodies, known clients
Internal fraud by employees of the enterprise; information leakage (trade secret disclosure); conscious actions of employees that undermine the reputation of the company (sabotage)	Publication of negative information about the company in the media and the Internet, critical discussion of the activity of the company in Internet blogs
Information closeness of the enterprise	Rating downgrades by rating agencies
Non-competitive and unethical behavior of the enterprise in the market	Leadership or the pursuit of market leadership
Ineffective media relations system	Unfair (non-commercial) behavior of competitors
Failure of the enterprise to fulfill contractual obligations to clients, loaners, collaborates, etc.	The general negative situation (economic, political, demographic, social, etc.) in the industry, country and world
Shortcomings in the organization of the internal control system and in risk management of the enterprise, including reputational	Public opinion about the enterprise
The inability of the company to effectively carry out its activities and provide quality products to its customers (inefficient management);	An extraordinary event, that disrupts the enterprise.
Lack of work on the image of the enterprise and control over its condition	Dissemination of false (unsubstantiated) rumors and information about the activity of the enterprise, the presentation of various claims and accusations against the enterprise by different groups of the public

Given that the impact of reputational risks on an entity's economic security may be exercised by external and internal entities, and taking into account the likely multidirectionality of such effects, we shall determine the effects of the entity's reputational risks on its economic security. Environmental factors are largely determined by those that are not directly related to the enterprise, but have a significant impact on the success of the enterprise, while internal environment factors directly relate to the enterprise management system. Therefore, the effects of external (Table 2) and internal environment (Table 3) factors on the enterprise are different in nature and intensity. Consider each of the consequences groups separately.

So, as we can see from Table. 2, the effects of an entity's reputational risks on its economic security are ambiguous. They can be both positive and negative. In the case of each particular enterprise, the prevalence of certain factors should be determined in detail.

Factors of the internal environment also significantly affect the reputational risks of the enterprise, causing certain changes in its economic security (Table 3). Table 3 shows that most of the effects of the influence of internal environment factors include certain values of enterprise stakeholders (both internal and external), so this is further evidence that consideration of reputational risks through the prism of the values of its stakeholders holds significance. If an enterprise is building its reputation by favoring the values, abilities and culture inherent in both the enterprise and its environment, it has the opportunity to improve its reputation in the short term. Taking into account the results of the study, it should be noted that the relationship between the reputational risks of the enterprise and its economic security is quite stable, however, depending on the industry in which the enterprise operates, the conditions and instrument of influence may vary.

We distinguish the determining reputational risk factors that are at the same time a prerequisite for their economic security.

Table 2

Consequences of the impact of the reputational risks of the enterprise on its economic security due to environmental factors (copyright development)

Environmental Factor	Direction of influence	Consequences of influence
Scientific and technological progress	«+»	Increased productivity; knowledge-intensive goods and services; upgrading of staff qualification level; innovation; reduction of production costs.
	«-»	Pollution of the environment; depletion of natural resources; disturbance of ecological balance.
Actions of competitors	«+»	Increasing the productivity of the enterprise to reach or exceed the level of competitors; the weakest businesses no longer participate in the fight for the consumer
	«-»	The negative reputation of competitors brings damage to the reputation of other companies
Mass-media	«+»	Reliable positive information improves consumers' attitude, first and foremost, to the product; social recognition
	«-»	Compromising information diminishes consumer confidence and reduces production.
Consumer opinion	«+»	The popularity of the enterprise is increasing; allows the company to increase the price of the product in comparison with the prices of similar products of competitors; providing additional psychological value to the products.
	«-»	Negative thinking helps to change the quality of the product, can lead to a change in the strategy of the company.
Supplier behavior towards the enterprise	«+»	Deferral of payment for services; lending at reduced rates; the trust of potential investors
	«-»	The inability to choose any supplier because of the relationship between suppliers and the nomenclature of the market
Actions of loaners	«+»	Business improvement; Market sector expansion; Increase of financial value of the enterprise
	«-»	A fall in confidence in an enterprise in case of non-issuance of loans
State regulation	«+»	Stability; increased sales
	«-»	In distrust of the industry as a whole, the prestige of the enterprise automatically falls
Attitude of investors to the enterprise	«+»	Investment attractiveness; Increase in production volume; Confidence in the future

Symbols: "+" - has a positive impact on economic security; "-" has a negative impact on economic security.

Table 3

Consequences of the influence of the reputational risks of the enterprise on its economic security due to the factors of the internal environment (author's development)

Factor of the internal environment	Direction of influence	Consequences of influence
Production quality	«+»	Increase in output; productivity growth; increasing the level of competitiveness; consumer confidence and potential investors
Enterprise staff	«+»	Attracting qualified personnel; inability to disclose a trade secret; work for the benefit of the enterprise
	«-»	Violation of enterprise unity; Enterprise authenticity
Actions and behavior of company executives	«+»	Direction of work of the whole enterprise; Company unity; Relations with partners, investors; Formation of professional values of staff
PR-management	«+»	Product recognition; reducing marketing costs; personnel security; open value proposition to the consumer
	«-»	Hiding facts relating to an entity's activities, both internal and external, can lead to a "bomb" effect: profits will decrease as sales decline
Professionalism of management	«+»	Investment attractiveness of the enterprise; keeping business secret

Symbols: "+" - has a positive impact on economic security; "-" has a negative impact on economic security.

Table 4 lists the main reputational risk factors that affect economic security, depending on the type of market in which the enterprise operates, and shows what part of the factors that affect the economic security of the enterprise are factors that affect the reputation of an enterprise in a particular industry.

As you can see, factors that affect economic security include those that affect the reputation of the company (reputation risk factors) and vice versa. However, the multiplier of influence is not always a constant value (belongs to the interval between 0 and 1), and depends on the branch of the enterprise.

Table 4
Prerequisites for Impact of Reputation Risks of Enterprises of Different Industries on Their Economic Security (author's development)

Field	Factors of economic security of the enterprise	Reputational risk-forming factors	Effect multiplier
Manufacture of food, beverage and tobacco	Production quality; Actions of competitors; Competitiveness of production and enterprise; Location	Production quality; Actions of competitors; Trust in the manufacturer; Advertising	2/4
Agriculture, forestry, hunting	Production quality; Actions of competitors; the political situation	Production quality; Actions of competitors; Honesty of the manufacturer; Consumer opinion	2/3
Consumer industry	Production quality; Technological factor; Investing in production development; Actions of competitors; Supplier behavior	Production quality; Technological factor; Actions of competitors; Supplier behavior; Investing in production development; the impact of the media; Consumer opinion	1
Mining industry	Loyalty to the company when concluding contracts; Price for products; Investing in production development	Loyalty to the company when concluding contracts; State protectionism Direction of actions of the management of the enterprise; Professionalism of management	1/3
Metallurgical production and production of finished metal products	Technological factor; Political factor; Investing in production development	Technological factor; Trust in the manufacturer; Behavior of suppliers, loaners	1/3
Domestic service	Quality of services; Personnel factor (reputation); Competitiveness of services	Quality of services; Enterprise staff; Competitiveness of services; Trust in the enterprise	1
Tourism	Quality of services; Professionalism of management; Competitiveness of production and enterprise; Investment factor; the legal factor	Quality of services; Professionalism of management; Trust; Enterprise staff; State protectionism	2/5
Health care and social assistance	Personnel factor (doctor's reputation); Technological factor; the legal factor	Enterprise staff; Enterprise awareness; Consumer experience	1/3
Education	Quality of services; Personnel factor (reputation); Investment factor; Regulatory legal factor; Competitiveness of the enterprise	Quality of services; Enterprise staff; Management actions; State protectionism; Professionalism of management	2/5

In turn, each industry is characterized by certain characteristics, enterprises operating in a particular industry operate in a specific market with defined rules, so the nature of the impact of the reputational risks of enterprises of different industry affiliations may be different, and therefore requires special research.

In addition, the study suggests that the strength of an entity's reputation risks on its economic security depends on certain parameters that are relevant to the characteristics of the market in which the enterprise operates. As you know, the market is characterized by certain rules of entry, exit, behavior, which differ depending on belonging to the economic sector. Therefore, it is impossible to prove the existence and strength of the impact of the reputational risks of the enterprise on its economic security, regardless of the type of market in which the enterprise operates. The impact of an entity's reputational risks on its economic security is steadily increasing and increasing because of increased competition between enterprises.

Therefore, in the current economic environment, effective reputation risk management is an important prerequisite for ensuring the economic security of the enterprise. Therefore, there is an objective need to identify reputational risk and to explore existing methods and approaches to assessing it.

Creating effective risk management mechanisms is an impossible task without assessing them, which is one of the most important steps in creating an enterprise-wide risk management system. In this case, we are faced with the task of finding and building an appropriate tool for assessing the reputational risk of the enterprise, which must contain a set of sufficient and necessary criteria, indicators and procedures. The goals and objectives of risk assessment determine the mechanisms of enterprise risk management.

Analyzing different risk assessment models, we chose the RADAR logic of the European Quality Management Foundation (EFQM) business improvement model. The EFQM Business Improvement Model is a recognized methodology at European level for a comprehensive assessment of the enterprise's performance and the drive to improve it. The essence of this methodology is based on the following principles: result orientation; customer orientation; leadership and sustainability of goals; process and data management; staff development and involvement; continuous analysis of best practices, innovations and improvements; partnership development; social responsibility.

RADAR is an evaluation method used to evaluate European Quality Award applicants. RADAR consists of four elements and their criteria:

1. Results: trends, goals, comparisons, causes, reach.
2. Approach: rational, integrated.
3. Deployment: feasibility, consistency.
4. Assessment and Review: measurement, study, improvement.

Also its great advantage is the ability of the enterprise itself to carry out the procedure of self-assessment, the use of benchmarking.

The need for expert judgment in risk assessment and management is driven by the following factors. The various formal methods of risk assessment cannot be unambiguous. The decision-maker (ODA) may be subjective, for example because of the responsibility for decision-making efficiency and so on. The answers to the main questions about risk assessment can be obtained from experts. When conducting the research, the experts should be guided by the following principles:

1. This technique is aimed at determining the degree of discrepancy between the target (ideal) and existing values of the reputational risk of the enterprise.

2. The proposed methodology can be used for businesses in the field of entrepreneurship. When using this methodology for other enterprises, appropriate procedures for its adaptation are required to optimize emerging model risk.

3. The estimation of reputational risk values in the context of uncertainty and the presence of a large number of criteria cannot be calculated accurately.

4. The methodology for conducting the study is based on the clear fulfillment of the requirements for conducting this type of research.

5. The selection of experts is carried out at the level of competence. The expert has the right to freely and independently argue his opinion.

6. The established expert group should include representatives of all target audiences of the enterprise: consumers; investors; employees; power; society; The media.

To build an algorithm for conducting expert research "Assessment of the reputational risks of the enterprise" we will use the methodology of expert research "Strategic environment for building partnerships".

The research algorithm has the following steps:

formulation of the purpose of the expert research on the basis of the essence of the problem being studied and motives for recourse to expert opinions;

formation of a group of organizers of examination;

development of expert evaluation procedures;

selection of experts;

obtaining expert assessments;

processing of survey results and analysis of retained data;

setting the degree of achievement of the purpose of expertise and bringing the results in a form that is convenient for management decisions.

An important step in assessing an entity's reputational risks is to identify the company's risk-bearing factors. Let us turn to the terminology and find out the essential characteristic of the concept of "risk factors".

Many factors influence the level of risk. They can be either independent of the business or independent of the business. There are many risk factors, so classifying them is more complex than risk classification. Confirmation of this is the developed risk management system «Mark to Future», which contains 50 to 1000 risk factors.

We consider the reputation of the company as a set of five of its system components: ethics in relations with external partners, corporate governance, reputation of top managers, quality of products and services, efficiency of management. Based on the research, isolated and specified Reputational Risk Factors (RRFs) are systematized in relation to the key components of reputation, which allows consideration of reputational risks for each management process. The proposed classification of reputation risk factors in practice makes it possible to work more effectively in the direction of improving the reputation of the company (Table 5). This systematization of risk factors makes it possible to substantiate methods for improving the effectiveness of reputation risk management and will provide an opportunity for positive reputation transformations.

Table 5

The main risk factors for the reputation of the company (copyright development)

Key components of reputation	**Reputational risk factors**	**Symbols in the matrix**
Management effectiveness	1. Management effectiveness	K1
	1.1. Unproductive high-risk alliances and partnerships	SK1.1
	1.2. Top managers' indecisiveness that causes the target audience to feel incompetent	SK1.2
	1.3. Lack of a reputation management strategy	SK1.3
	1.4. Inconsistency of enterprise management processes	SK1.4
	1.5. Financial condition of the enterprise	SK1.5
Quality of products, services	2. Quality of products, services	K2
	2.1. Non-competitive product quality	SK2.1
	2.2. Lack of response to criticism in the media and the Internet	SK2.2
	2.3. Accusations of jeopardizing the products of the enterprise by the target audiences	SK2.3
Top managers reputation	3. Top managers reputation	K3
	3.1. Impairment of manager's reputation	SK3.1
	3.2. The negative attitude of the manager to ethics, corporate culture, corporate social responsibility	SK3.2
	3.3. Inconsistency of actions of the head strengthening the reputation of the enterprise	SK3.3
Corporative management	4. Corporative management	K4
	4.1. Low level of corporate culture	SK4.1
	4.2. Awareness of staff about possible reputational risks	SK4.2
	4.3. Staff incompetence	SK4.3
Ethics in relations with external partners	5. Ethics in relations with external partners	K5
	5.1. Non-competitive and unethical behavior of the enterprise in the market	SK5.1
	5.2. Non-performance of contractual obligations	SK5.2
	5.3. Business opacity, providing untrustworthy information	SK5.3
	5.4. Non-compliance with the requirements of general business etiquette, legal norms, partnerships	SK5.4
	5.5. The questionable legitimacy of methods of lobbying the interests of the enterprise	SK5.5

Identification of reputational risk factors based on the analysis of information needs and stakeholder perceptions, practical cases of enhancing the reputational risks of enterprises.

In order to form a positive opinion of the company among the target audiences, a tool for assessing the impact on each target audience in specific business conditions is required. Therefore, the next step should be to use risk management mechanisms to determine the limits of influence on priority target audiences in order to achieve the tactical and strategic goals of the enterprise to build its reputation. We believe that complex components of reputation are effectively viewed in certain cognitive frameworks, circuits. It is then possible to single out its most significant components and manage them only within certain limits (synergistic contours of influence - SLE) that exert a strategic influence on the components of reputation. SLE includes the main reputational risk factors of the internal and external environment, systematized in relation to the reputation of the company (Table 5).

The proposed model of isolation of synergistic contours of influence in relation to target audiences (stakeholders) allows us to establish a relationship between a specific target audience and a synergistic contour of influence in order to determine the significance, and, therefore, the urgent formation of a positive thought in a given process management. Under the target audience, we will understand the most important for the enterprise group of audiences to which the efforts of top management through appropriate processes of reputation risk management are directed. Under the synergistic contour of influence, we understand the set of processes managed by top management of the enterprise, whose efforts are directed to influence the most important reputation risk factors. The following model is highlighted in the proposed model:

K1 - Management effectiveness (enterprise strategy, unproductive high-risk alliances and partnerships, financial position of the enterprise, dynamics of financial indicators, cost management policy, etc.)

K2 - Quality of products, services (inconsistency of production process with certain conditions, accusations of the enterprise at risk of production by interested audiences (customers, controlling bodies, etc.), reaction to complaints and comments, customer perception, behavior of the organization in the market) ;

K3 - Top managers reputation (inconsistency of the manager's actions in strengthening the company's reputation, negative attitude of the manager to ethics, corporate culture, corporate social responsibility, etc.);

K4 - Corporate Governance (low corporate culture, social responsibility, staff incompetence, etc.);

K5 - Ethics in relations with external partners (position and policy of information openness and accessibility, values of the organization in partnership, non-compliance with the requirements of general business etiquette, legal norms, partnership relations, etc.).

Stakeholder relations management is the method that underpins the developed methodology for assessing the reputational risks of an enterprise, through which businesses seek to meet the growing demands of economic, environmental and social responsibility.

From the point of view of the stakeholder approach the following reasons can be distinguished for managing the reputational risks of the enterprise:

- Investors and shareholders are interested in creating long-term business value in order to ensure continuity and stability in the level of dividends paid. In order to achieve this goal, it is necessary to strengthen the degree of linkage with other stakeholders.
- Clients, besides the commercial attractiveness of the terms of cooperation with suppliers, seek to choose the most reliable and stable counterparties with a strong positive reputation.
- Employees are less likely to change jobs and more motivated to work if they identify with the employer.
- Suppliers in times of economic instability seek to minimize losses by selecting the most reliable customers, even on less attractive commercial terms.
- Investors and lenders favor the most transparent businesses, especially in times of crisis.

- Continuous cooperation with public authorities, in particular on issues of respect for the interests of society, allows to ensure the integration of compliance with the principles of economic, environmental and social standards in the enterprise management system and minimize risks.

- A well-developed system of communications with analysts, experts, rating agencies on information disclosure allows to minimize information asymmetry in the market.

Based on the theory of management, we believe that six to nine target audiences should be taken into account, in which case the system will be managed.

Depending on the scale of activity and the field of operation, the stakeholders of different enterprises vary. In our study, we identify six target audiences that can reach the majority of stakeholders in order to manage the enterprise's reputation risks: consumers, investors, employees, government, society, and the media. The higher the degree of mutual involvement in a business partner, the higher the level of reputation correlation, hence the need to assess the reputational risks that arise in the relationship of the company with its stakeholders.

According to the results of surveys of interested audiences (target groups, stakeholders) it is proposed to make a reputation matrix - a list of risk-forming factors, grouped into synergistic contours of influence (Table 6), which reflects the perception of the reputation of the enterprise by different groups of stakeholders. The Reputation Matrix is proposed to fill in focus groups, representatives of different target groups of stakeholders (consumers, investors, employees, government, society, and media) in order to determine the importance of each SLE for each group of stakeholders.

Table 6

Enterprise Reputation Matrix (author development)

Synergistic contours of influence	**Target groups (stakeholders)**			
	MG1	**MG2**	**…**	**MGn**
K1	K1MG1	K1MG2	...	K1MGn
SK1.1	SK1.1 MG1	SK1.1 MG2	...	SK1.1 MGn
…	…	…	...	…
SK1.k	SK1.k MG1	SK1.k MG2	...	SK1.k MGn
K2	K2 MG1	K2 MG2	...	K2 MGn
SK2.1	SK2.1 MG1	SK2.1 MG2	...	SK2.1 MGn
…	…	…	...	…
SK2.k	SK2.k MG1	SK2.k MG2	...	SK2.k MGn
…	…	…	...	…
Ki	Ki MG1	Ki MG2	...	Ki MGn
Ski.k	Ski.k MG1	Ski.k MG2	...	Ski.k MGn

In the Table 6, Ki is synergistic contours of influence, SKi.k is risk-forming factors of reputation, systematized into synergistic contours of influence, MGn is target groups (stakeholders). Rating (SK1.kMGn) occurs for each component of the Ki circuit. And the value of Ki is calculated as the arithmetic mean of the components of the circuit.

When filling in the reputation matrix, it is suggested to use the Delphi method, which is most appropriate under these conditions, since the information needs of the target groups of stakeholders are interrelated and take into account the estimates of other groups. This method allows to take into account the independent opinion of all participants of the group of experts on the discussed issue by consistently combining ideas, conclusions and proposals and to reach an agreement based on repeated anonymous group interviews. Delphi's method allows you to adjust the opinions of experts after announcing the results of the responses of other groups.

For the purpose of objective interpretation of the results of the surveys, it is considered necessary to conduct in-depth interviews and focus groups with the respondents to determine their motivation and avoid mistakes.

Reputation matrix is the basis for the calculation of the integral indicator of the level of reputational risk, allows to estimate the level of significance of each SLE. Building a reputation matrix will enable you to identify strengths and weaknesses in building a reputation for each

stakeholder group. The strength of the risk of harming the reputation of the company is determined by expert survey of interested audiences, using the method of rating. The expert team, according to the proposed rating scale (0 points - does not create risks, 10 - can create very significant reputational risks) fills in the reputation matrix, exposing the corresponding points. The expert assigns each SLE component a certain score depending on the force of influence. The result of the research is a formed reputation matrix.

The next step is to calculate the sum of points for all components of each SLE for each stakeholder group and determine the arithmetic mean of each SLE for each stakeholder group.

Thus, using the data of the reputation matrix of the enterprise, built on the basis of the method of expert assessments through the a priori ranking of options, weight characteristics of risk-forming factors of reputation are determined for each synergistic contour of influence. (Ki).

The next stage is the interpretation of the values of the integral indicator of the level of reputational risk according to the developed scale of assessment, and the conclusion is drawn about the implementation of the reputational strategy of the company with the development of specific measures aimed at adjusting the level of reputational risk. Thus, in order to further manage reputational risk effectively, an important step should be to establish a scale for assessing reputational risk. In other words, it is necessary to choose the discreteness of the rating scale, assign a clear characteristic to each value in the scale, determine the data and / or their sources by which the value will be selected for each of the risk components, set the criteria for risk criticality.

Choice of discreteness of scale. For a qualitative assessment of reputation risk, it is better to use a 3-point or 6-point scale. Using a larger scale can make it difficult to interpret. For quantitative assessment of risks, a 5-point, 6-point or 10-point scale is more common. The choice of the dimension of the scale is not a fundamental factor. In the study, we use a 6-point scale.

Interpretation of scale values by components of reputational risk. Regardless of the type of scale and its dimension, each scale value requires a characteristic. Table 7 provides an interpretation of the values of the Reputation Risk Scale.

It should be noted that the choice of the scale and its dimension, provided it is correctly applied, does not affect the subjectivity of the assessment of reputational risks.

Table 7

Characteristics of Reputation Risk Components on a 6-point Scale (author's design)

Level of risk	Probability of occurrence	Level characteristics
Minor	Almost impossible	The company has a high reputation, which is undeniable for target audiences
Moderate	From time to time	The company controls the situation and the perception of its target audiences
Average	Possible	Reputation risks are not taken into account when building a strategy. The enterprise has some difficulties in managing reputational risks
Critical	Periodically	The enterprise responds to the negative effects of the reputation after the fact. Reputation risk management is poorly performing because it only occurs when problems occur.
Ultimate	Almost inevitable	Poor contingency regulations are lacking in the area of reputation risk management. Poor product quality is driven by the use of outdated technology. Lack of quality control.
Inadmissible	Always	The company does not understand the expectations of its clients / partners and therefore does not fulfill its obligations. Top-management of the enterprise forms a negative attitude to ethics and corporate culture, social responsibility of business; unethical and fraudulent actions of middle and lower level employees.

Normalization of the Probability component. Choosing a probability value is one of the most difficult tasks in assessing risks in general, and reputational risks in particular. It is at this stage that discussions, disputes and misconceptions arise. For example, it is very difficult to choose a probability value between "from time to time" and "possible" without analyzing the facts and knowledge about the nature of the variability of the risk object.

Moreover, in order to maintain the value of the probability after the estimation it is necessary to ensure the effectiveness of the system of management of deviations and changes, to establish statistical control of the processes.

It is important to have clear criteria and a clear interpretation for each probability scale value. Thus, the formation of clear boundaries (criteria) of the value of the integral indicator of the level of reputational risk to unacceptable, marginal, critical, average, moderate and insignificant is based on the expert evaluation study. The sources of data are the annual quality reviews in the Business Improvement Model conducted by the European Quality Management Foundation (EFQM) and the annual reputation and reputational risk surveys conducted by the international consulting company Reputation Institute.

Conclusion

Existence of risk is a systemic and significant factor that has different effects on the performance of economic entities, industry and industrial complexes as a whole. In today's tough highly competitive market environment, the experience of operating foreign and Ukrainian enterprises shows that reputational risk is of great importance among non-financial risks, since its neglect and undervaluation can lead to negative consequences for the enterprise. In the theory and practice of risk management, reputational risk is given insufficient attention: there is no scientific research that can be used as a complete theoretical and methodological basis for managing reputational risk, including the basic principles and mechanisms of risk assessment and its impact, which causes objective necessity and urgency of the outlined scientific problem.

Based on the conducted research, the factors of external and internal environment that affect the economic security of the enterprise were identified. Reputational risk has been found to be a factor in the majority of both external and internal factors affecting an entity's economic security. The results of the study made it possible to determine the prerequisites for the impact of a company's reputational risks on its economic security.

An analysis of general approaches to risk assessment has shown that there is no coherence between methods and approaches to assessing the reputational risk of an enterprise. Therefore, the dissertation has developed a methodological tool for assessing the reputational risks of the enterprise, which is based on the principles of system-functional and process approaches and outlines the synergistic contours of the influence of risk-forming factors in view of target groups of stakeholders in the reputational matrix of the enterprise subtype and choose ways to minimize it.

In the study, an integral indicator of the level of reputational risk is an indicator whose value characterizes the level of risk of loss for a given entity in carrying out a certain type of activity. The proposed technology of estimation of reputation risks of the enterprise allows to carry out their complex assessment and to serve as a basis for making strategic decisions regarding the choice of strategy for reputation risk management.

Formation of clear criteria and clear interpretation for each value of the integral indicator of the level of reputation risk is an important step in the development of an effective reputation strategy. In the dissertation, based on the aggregated expert assessments, the threshold values of attribution of the integral indicator of the level of reputational risk to unacceptable, marginal, critical, average, moderate and insignificant were determined.

The prospects for further research are the development of strategic decisions on the choice of a strategy for reputation risk management in order to mitigate the risks of business activity; development of a Reputational Risk Stakeholder Panel; development of tools for forming the program of management measures for their optimization: marketing, administrative and organizational. The use of the developed tools is the basis for decision-making by the enterprise management regarding the choice of a reactive or proactive approach to the management of reputation risks.

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MODELING BUSINESS MANAGEMENT FOR INTERNATIONAL DEVELOPMENT: STRATEGIC MANAGEMENT FOR POVERTY REDUCTION

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Abstract. *This paper centers on the theoretical conceptualization of a novel model referred to as "Business Management for International Development (BMID)." This model is interdisciplinary and practical, aiming to facilitate greater development in the developing world. Specifically, it seeks to demonstrate how the two academic fields of International Development and Business Management can complement each other, given their close connection within the social sciences. The fundamental aspect of this research is to outline a path for the development of this emerging academic discipline, both in scholarly and practical terms. In the literature review, a Japanese academic scholar named Hayashi has previously attempted to formulate "Development Business Management" (known as "Kaihatsu-Keieigaku" in Japanese) through his research in the Philippines and Bangladesh. However, there are opportunities for further refinement and expansion in various areas, particularly given the rapidly evolving global landscape. Notably, additional perspectives can be integrated, such as business development strategies based on income levels and the formulation of economic and business development policies. Utilizing the Grounded Theory Approach and the Strategic Management Framework to support the BMID model suggests that business management can be linked to economic development, particularly in relation to income levels categorized as low-income and lower-middle income, with the ultimate goal of reducing poverty through business activities. Nevertheless, there remain several crucial aspects that require further investigation to fully harness the potential of BMID.*

Keywords: *Business Management for International Development, Poverty Reduction, Income Levels, Strategies, Modeling.*

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Introduction

While the global economy has made significant strides since World War II, numerous economies continue to grapple with challenges related to growth, prosperity, and development. Previous research has underscored the pressing issue of achieving the Sustainable Development Goals (SDGs) in developing nations, which is considered one of the world's most critical social concerns (as noted by the UN in 2018). Notably, these developing countries have been confronted with elevated poverty rates, with lower income levels ranking among their most pressing social problems as highlighted by the World Bank (2023). Despite the ongoing pandemic since early 2020 reported by the World Health Organization (WHO, 2022), it remains crucial to promote socio-economic development by reducing poverty in pursuit of the SDGs.

Business opportunities have provided nations with the means to stimulate economic growth and enhance individual incomes. Industrialization has played a pivotal role in fostering economic development, as exemplified by East Asian economies such as Japan, South Korea, Taiwan, and

China, which achieved significant economic progress from the 1950s to the 1980s discussed by Lewin and Caillods (2001). Importantly, the effective management of human resources and organizational development has been identified as critical factors for maximizing productivity in workplaces.

A recent trend in advancing the SDGs involves development sectors seeking to alleviate poverty by leveraging their business products and services, particularly through inclusive business practices, fair trade initiatives, and international corporate social responsibility (CSR). In essence, the field of economic development should closely be intertwined with business management to enhance national and individual incomes, as well as long-term organizational productivity, notably in developing regions. While economic and business studies share interconnectedness within the social sciences, the practical fusion of these academic disciplines has seldom been explored.

Given this societal and academic backdrop, this study concentrates on the theoretical establishment of a novel academic discipline known as "Business Management for International Development." This interdisciplinary and pragmatic discipline aims to facilitate further development in the developing world by drawing insights from existing research and previous analytical frameworks. The pursuit of this new discipline is significant in both its theoretical and practical contributions to the real world.

Literature Review

The literature review in this paper is composed of four topics of “Development Status in the Developing World,” “International Development Studies,” “International Business Management,” and “Development Business Management,” and identification of study gaps are shown below.

2.1. Development Status in the Developing World

A wealth of statistical data is available that provides insights into the development status of countries in the developing world. Among these statistical sources, the World Development Indicators (WDI) stand out as a representative dataset. To illustrate a nation's economic condition, one straightforward example is income. Gross National Income (GNI) per capita serves as one of the most well-recognized indicators for assessing individual income levels within each country. Table 1 offers a summary of GNI per capita across various regions and presents economic trends spanning from 1990 to 2022.

It is readily apparent that a significant disparity in GNI per capita has existed over the past 32 years between two distinct groups: East Asia, Europe, and North America, on one hand, and South Asia, Latin America, and sub-Saharan Africa on the other. The former group is referred to as the "Successful Group" and the latter as the "Failure Group" in terms of development (Otsuka, 2020). The author underscored the pivotal role of industrial factors, particularly industrialization, business opportunities, and entrepreneurship, in enabling the Successful Group to achieve further development, particularly in elevating national income levels. As a result of these income disparities, a divergence has emerged between northern regions and southern regions, giving rise to long-term global challenges.

2.2. International Development Studies

The primary objective of International Development Studies (IDS) is to contribute to the further development, growth, and prosperity of the developing world. It achieves this by conducting quantitative and qualitative analyses of policies and institutions within each economy. Additionally, IDS aims to establish development strategies, as outlined by Otsuka in 2020. Notably, Otsubo et al. in 2009 highlighted that IDS is an interdisciplinary field comprising various academic disciplines, including Development Economics, Development Politics, and Development Sociology. These disciplines collectively address a wide array of global international development issues such as poverty, economic growth, governance, international relations, education, healthcare, agriculture, disaster risk, water resources, climate change, environmental concerns, and industrialization.

One of the reasons for this interdisciplinary approach is that economics can easily intersect with other academic fields such as politics, sociology, psychology, engineering, anthropology, and more, as emphasized by Otsuka (2020). Development Economics, in particular, focuses on addressing and analyzing these aforementioned development issues. Scholars have been particularly concerned with strategies to increase income per capita and reduce poverty levels. A crucial aspect of addressing economic development is categorizing countries into income stages, as outlined by the World Bank (2023). These income stages consist of Low-income (less than US$1,085), Lower-middle Income (US$1,086 to 4,255), Higher-middle Income (US$4,256 to 13,205), and High Income (over US$13,206). This classification facilitates the establishment of development strategies.

The concept of the "Middle-Income Trap," coined by Gill and Kharas (2017), refers to the challenge faced by economies unable to advance beyond the middle-income stage, particularly prevalent in regions like ASEAN and Latin America. The three stages encompassing Low-income, Lower-middle income, and Higher-middle income economies are commonly referred to as "developing countries." However, Rosling (2018) suggested an alternative classification, advocating for four income groups rather than the traditional binary division of "Advanced Countries" and "Developing Countries." This perspective aligns with Bill Gates' view that the world's situation is not as dire as it may seem, as reported by Brueck (2018). In this context, IDS, especially within the field of Development Economics, addresses development issues in the developing world, with a primary focus on income levels and poverty reduction, often employing theoretical frameworks for analysis.

Table 1
The Trend of GNI per capita (Atlas Method, US$) from 1990 to 2022

Region/Year	1990	2000	2012	2015	2018	2019	2020	2021	2022
East Asia & Pacific	2,801	3,869	9,123	9,819	11,097	11,690	11,642	12,804	13,485
Japan	28,380	36,810	50,060	39,380	41,800	41,970	40,870	43,450	42,440
Republic of Korea	380	430	1,060	1,330	1,730	1,890	1,900	2,080	35,990
China	330	940	5,910	7,890	9,540	10,310	10,520	11,930	12,850
Singapore	11,450	23,680	51,710	53,160	56,560	58,910	55,260	63,000	67,200
Thailand	1,520	1,980	5,420	5,580	6,450	7,080	6,920	7,090	7,230
Malaysia	2,470	3,490	9,980	10,400	10,360	10,960	10,320	10,710	4,580
Indonesia	560	570	3,550	3,420	3,850	4,070	3,900	4,170	11,780
The Philippines	830	1,180	2,840	3,350	3,640	3,770	3,350	3,550	3,950
Vietnam	130	380	1,980	2,480	3,060	3,340	3,450	3,590	4,010
Myanmar	40	130	1,010	1,200	1,250	1,300	1,370	1,170	1,210
Lao PDR	190	280	1,360	1,970	2,470	2,520	2,470	2,510	2,360
South Asia	375	445	1,390	1,505	1,594	1,738	1,928	2,014	1,865
Bangladesh	300	430	970	1,210	2,020	2,210	2,300	2,570	2,820
India	380	440	1,470	1,590	1,980	2,080	1,900	2,150	2,380
Europe (Euro Area)	17,747	22,174	39,242	39,449	38,831	40,238	38,211	41,976	43,742
United Kingdom	18,610	29,390	41,810	44,480	42,180	43,380	38,590	44,790	48,890
France	20,710	24,990	43,410	43,800	41,170	42,460	39,440	44,160	45,860
Germany	21,300	26,180	46,560	47,220	47,490	49,220	48,050	51,660	53,390
Latin America	2,302	4,150	9,809	9,154	8,651	8,754	7,674	8,131	8,688
Brazil	2,590	2,810	2,760	2,720	2,960	3,700	4,440	5,060	4,920
Peru	840	1,960	5,740	6,290	6,070	6,030	6,430	6,770	6,000
North America	23,724	34,672	52,633	55,719	55,813	57,582	61,594	64,135	73,934
United States	24,060	35,960	52,790	56,620	57140	59220	63,460	66,130	64,650
Sub-Saharan Africa	651	575	1,717	1,754	1,588	1,503	1,517	1,570	1,500
Kenya	380	430	1,060	1,330	1,730	1,890	1,900	2,080	2,170
Zambia	450	350	1,660	1,540	1,400	1,390	1,130	1,030	1,170
World	4,244	5,496	10,464	10,587	11,100	11,505	11,052	12,055	12,804

Source: World Development Indicators 2022 (World Bank, 2023)

Poverty can be defined as a situation where individuals lack access to the basic necessities required for a decent life, including education, employment, food, healthcare, clean water, housing,

and energy, as described by the United Nations Development Programme (UNDP) in 2021. Since World War II, numerous international organizations and agencies have been actively engaged in poverty reduction efforts in economically disadvantaged countries. As a result, certain East Asian economies, notably Japan, South Korea, and China, have made significant strides in development since the Second World War, as highlighted by Perkins in 2013. However, there remains a need for further development, growth, and enhancement of living standards, particularly in Southeast Asia, where poverty continues to be a pressing social issue.

The World Development Indicators (WDI, 2023) database offers a valuable resource for analyzing indicators related to poverty. Among these statistics are the number of individuals living on less than $1.90 per day and the poverty headcount ratio across six regions: East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & North Africa, South Asia, Sub-Saharan Africa, and the World. Sub-Saharan Africa still reports the highest proportion of the poverty headcount ratio, standing at 38.9% (equivalent to 435.6 million people) in 2018. In contrast, East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, and Middle East & North Africa display considerably lower poverty headcount ratios, ranging from approximately 1% to 4% in 2018. Analyzing the trends in poverty and individual income by region and country reveals a clear dichotomy: one group has succeeded in reducing poverty over time, represented by East Asia and the Pacific, while the other has struggled, exemplified by sub-Saharan Africa. In fact, Otsuka in 2020 succinctly characterizes the global development landscape as "Successful Asia vis-à-vis the failure Africa." The individuals living in poverty on less than $1.90 per day are often referred to as the "Base of the Pyramid," numbering approximately over 4 billion worldwide, as noted by Hammond et al. (2007). Colliar (2008) used the term "the Bottom of Billion" in a similar context. Unfortunately, extreme poverty remains a persistent issue today.

Poverty is not solely assessed based on income; it encompasses various dimensions. For example, the United Nations Development Programme (UNDP) in 2023 has developed the Human Development Index (HDI), which incorporates three key elements: life expectancy, secondary education enrollment rates, and Gross National Income (GNI) per capita. This approach is rooted in his "Capability Approach," as discussed by Sen in 1999. By considering factors beyond individual income, the UNDP underscores the importance of measuring poverty from diverse perspectives and ranks nations worldwide based on their HDI scores. The closer a country's HDI figure is to 1.00, the higher its development status. Table 2 presents the trend of HDI scores by region from 1990 to 2021. Notably, there has been an improvement in HDI, particularly in East Asia and the Pacific, with the score increasing from 0.517 in 1990 to 0.749 in 2021.

Table 2
Trend of Human Development Index per Region (1990 to 2021)

No.	Region/ Year	1990	2000	2010	2015	2021
1	Middle East	0.556	0.614	0.676	0.691	0.708
2	East Asia and the Pacific	0.517	0.595	0.688	0.724	0.749
3	Europe and Central Asia	0.662	0.675	0.739	0.775	0.796
4	Latin America and Caribbean	0.632	0.69	0.736	0.759	0.754
5	South Asia	0.437	0.501	0.58	0.62	0.632
6	Sub-Saharan Africa	0.404	0.426	0.501	0.535	0.547

Note. Based on the UNDP (2022), author summarized

2.3. International Business Management

In contrast, International Business Management (IBM) is structured to explore effective business practices systematically, aiming to provide a deeper comprehension of achieving competitive advantages within the business environment. IBM seeks to enhance knowledge in entrepreneurial management, encompassing various aspects such as business strategy, marketing, finance, leadership, and human resource management. It also delves into global economics, including international economics, industrial economics, and public economics, from a global

perspective. Notably, it places significant emphasis on multinational organizations operating in advanced economies as well as emerging economies like Brazil, Russia, India, China, and others, as discussed by Enatsu (2003).

At its core, IBM places a strong emphasis on strategic management as a fundamental discipline within the field. Various analytical frameworks, such as Porter's industrial structural analysis, internal and external environmental analyses, SWOT analysis, and VRIO analysis, play a crucial role in IBM education, as outlined by Kotosaka (2017).

The ultimate objective of IBM is to equip learners with a comprehensive understanding of various facets of business management to optimize organizational benefits within specific markets through strategic approaches. Achieving this goal necessitates a thorough study of economics, including business economics, international economics, and public economics. While economics primarily aims to maximize output with minimal resources at the national or regional level, business management focuses on maximizing organizational output at the individual level, as described by Enatsu (2004). Despite the apparent differences in the orientations of these two academic disciplines, recent developments in IBM have shown a growing interest in crafting business strategies aligned with the Sustainable Development Goals (SDGs), often referred to as "SDGs Business," introduced in Europe in 2015, as reported by JETRO (2022). In essence, IBM is increasingly focused on contributing to sustainability and promoting practices that support improvements in this regard.

2.4. Development Business Management

In recent developments within International Business Management (IBM), Hayashi (2016) has pioneered the creation of a novel academic discipline known as "Development Business Management" (DBM), referred to as "Kaihatsu-Keieigaku" in Japanese, by focusing on the Bas of the Pyramid (BOP) business. The concept of Bottom of the Pyramid (BOP) business was introduced by scholars Hart and Prahalad (2002), as documented in their research paper. BOP business can be defined as a behavior-oriented model or approach that enables businesses to effectively engage in underserved and underdeveloped markets (Mathur et al., 2016). Over time, BOP business cases have gained traction, particularly in the United States, the United Kingdom, and Japan, with a focus on achieving a balance between poverty reduction and maximizing business profits. While the field of business management has traditionally associated "development" with academic areas like Human Resource Development or Leadership Development, which concentrate on optimizing human resource allocation and enhancing leadership to maximize organizational performance, which was discussed by Joy-Matthews et al. (2004), the DBM takes a different approach.

Distinct from HRD, Hayashi's research highlights that DBM is concerned with promoting the "Base of the Pyramid (BOP)" in the developing world. More precisely, it centers on addressing poverty reduction among the BOP, which comprises the lowest income stratum within emerging economies. Hayashi's study delves into this issue by examining the unique characteristics of emerging markets and devising business strategies to combat poverty. He observed that, conventionally, poverty-related matters had been primarily explored and analyzed within the academic field of "Development Economics." However, Hayashi's research, primarily focusing on examples from the Philippines, aimed to establish the DBM as a distinct discipline with the ultimate goal of addressing poverty in the developing world through a business-oriented approach. As Mishima (2018) pointed out, the criteria for poverty and an organization's contribution to it are not explicitly discussed. When it comes to defining poverty, how was it measured? What are the poverty indicators? For instance, in the field of development economics, poverty indicators include per capita income and daily per capita consumption expenditures, and these variations are examined while assessing the outcomes of development. On the other hand, if the author proposes that the challenge in development management is poverty alleviation and defines management as the study of organizations, then an indicator for development management would likely pertain to organizations' involvement in addressing poverty. However, it appears that this indicator is not necessarily explicitly stated in this book.

Identification of a Study Gap, Study Objective, and Research Question

3.1. Identification of a Study Gap

Upon reviewing the existing literature related to International Development Studies and International Business Management, it became evident that there is a significant lack of research that attempts to integrate these two academic disciplines. While Hayashi (2016) made efforts to formulate "Development Business Management (Kaihatsu-Keieigaku in Japanese)" with a focus on Base of the Pyramid (BOP) businesses, his vision and doubts about addressing poverty issues through Business Management resonated with me. However, it appears that there is still room for further development in creating a comprehensive academic discipline aimed at fostering economic and business growth.

Through this literature review, the most notable research gap identified is the absence of robust models for promoting poverty reduction through business development, especially concerning BOP businesses, either in theoretical or conceptual terms. This gap is evident in Hayashi's previous study and others' work. When addressing development challenges, it becomes crucial for scholars to establish theoretical or conceptual frameworks that are relevant to development strategies in the developing world, as emphasized by Otsuka (2020). Therefore, there is a pressing need for the formulation of development strategies that can effectively advance poverty reduction through business ventures.

3.2. Study Purpose

The main objective of this study is to make a meaningful contribution to the advancement of development, growth, and prosperity in developing countries. This will be achieved by creating a distinct academic discipline called "Business Management for International Development." This discipline will be primarily built upon the fusion of International Development and Business Management, both in terms of academic theory and practical application. The study will initially focus on low and lower-middle-income economies (LLMICs) and employ case studies from selected countries in this income bracket as a starting point for research.

3.3. Research Question

What steps should be taken to create a novel model for Business Management in the context of International Development, aiming to foster greater socio-economic development through business growth in Low and Lower-Middle-Income Countries (LLMICs)?

Frameworks

When considering the primary objective of combining business management with sustainable economic development, several frameworks can be employed to create a new framework pertinent to "Business Management for International Development" (BMID).

To gain insight into the economic development model, a valuable model was discovered. Drawing from key concepts like Lewis's "turning point" and Rostow's "take-off," Tran (2016) devised a progression from low-income to lower-middle income, higher-middle income, and high-income stages. His framework's focal point is that many economies reach a plateau within the middle-income range, leading them into either the lower-middle-income trap (LMIT) or the higher-middle-income trap (HMIT) (Tran, 2016). He proposed that enhancing development institutions and creating opportunities for capital investment growth offer a way out of the LMIT, while elevating total factor productivity (TFP) and investing in human resource development can assist national economies in escaping the HMIT (Tran, 2016). In essence, he provided a theoretical demonstration to overcome these traps within the context of the traditional economic development stage model.

When formulating a development strategy, the Strategic Management Framework (SMF) serves as a comprehensive model that outlines the strategy process used by numerous organizations, both in the business and non-business sectors. The SMF encompasses three primary activities: establishing vision and mission, formulating a strategy, and implementing it (WWP, 2019). The SMF aids organizational leaders in considering their strategies comprehensively.

Regarding business development for poverty reduction through education, Hara (2022) hypothetically devised a business development strategy based on income levels, particularly for Bottom of the Pyramid (BOP) businesses, with a focus on impoverished economies in various regions like South Asia and Sub-Saharan Africa. Specifically, this framework visually illustrates a roadmap for poverty reduction across different income stages, indicating which development issues should be addressed and where attention should be directed within the BOP stage (Hara, 2022). Hara explained that five sequences were arranged to promote BOP businesses. Commonly, all countries need to establish government ownership, develop infrastructure, and invest in education (Hara, 2021\2). Within the infrastructure development phase, the next step is to foster technology transfer and development from abroad through increased investments in technology and training, as outlined by Ohno (2010). The fourth stage involves further enriching Foreign Direct Investment (FDI). Finally, the promotion of BOP businesses can be enhanced through FDI and other development assistance methods.

Based on these aforementioned frameworks, an initial proposed framework was hypothetically constructed to illustrate BMID in Low and Lower-Middle-Income Countries (LLMICs), as depicted in Figure 1.

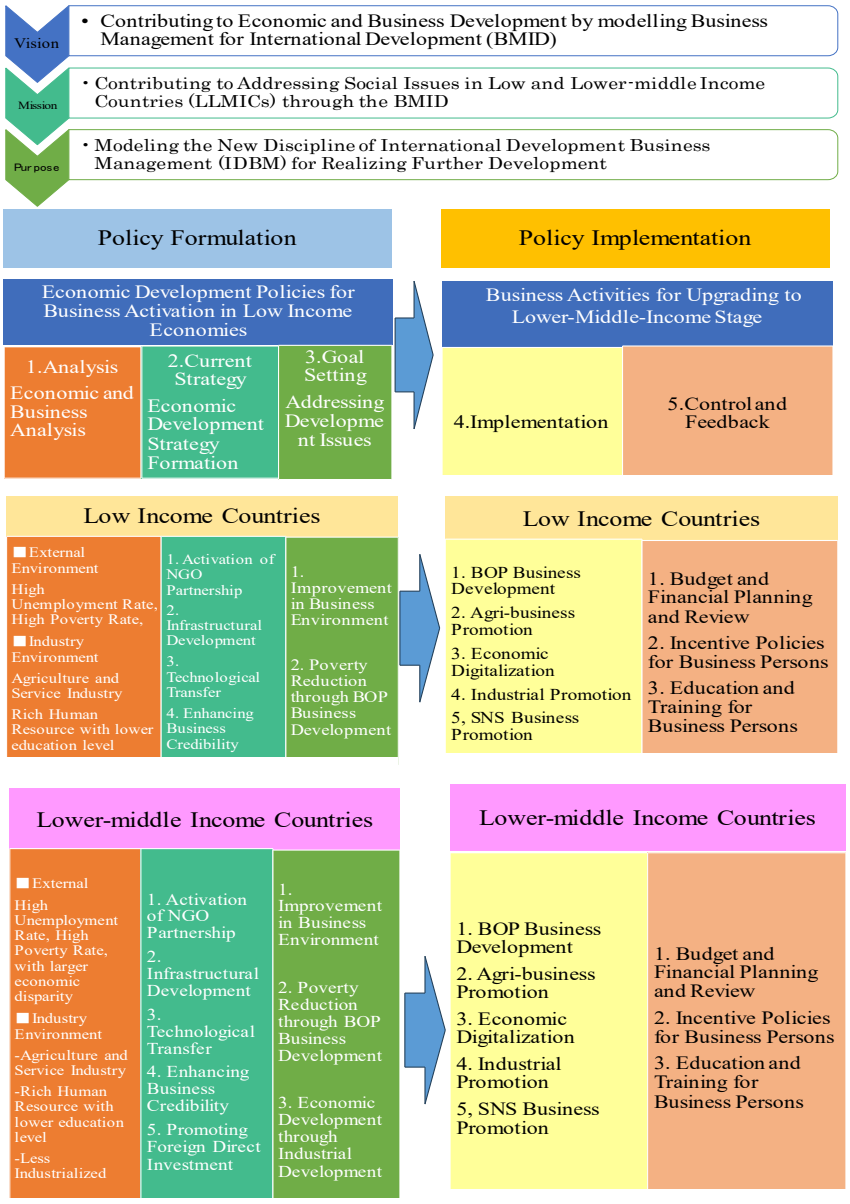

Figure 1.
A Suggested Strategic Framework of Business Management for International Development in the LLMICs
Source: Based on Tran (2016), WWP(2019), and Hara(2022), author formed the framework

First and foremost, this framework is structured around five key stages: "Vision," "Mission," "Purpose," "Policy Formulation," and "Policy Implementation," drawing inspiration from the SMF model. Notably, what sets this framework apart is that it aligns these formulation and implementation phases with the income stages of Low-income and Lower-middle income, drawing from the frameworks referenced by Tran (2016) and Hara (2022).

Within the "Vision," "Mission," and "Purpose" sections, the primary objective is to create an academic structure for Business Management for International Development (BMID) that contributes to visualizing a scenario of economic development through business activities, particularly in the developing world. Additionally, in the "Policy Formulation" and "Policy Implementation" phases, five sequences are incorporated: "1. Economic and Business Analysis," "2. Economic Development Strategy Formation," "3. Goal Setting," "4. Implementation," and "5. Control and Feedback," referencing the SMF model as well. Conceptually, the "Formulation" aspect emphasizes the development of economic policies aimed at stimulating business activities within the three income stage economies. Meanwhile, the "Implementation" aspect focuses on promoting business activities to elevate income levels.

In this manner, a framework has been established, with three distinct platforms tailored to each income stage. A fundamental premise of constructing this framework is the recognition that business opportunities ("Policy Implementations") cannot be effectively activated without first laying the groundwork for essential economic infrastructure ("Policy Formulation"). Without this foundational work, business activities cannot be put into practice. In essence, economic development policies through poverty reduction are inherently intertwined with the field of international business management.

Furthermore, there is a current emphasis on promoting technology as a key driver of success. For instance, "economic digitalization" and "SNS Promotion" through further promotion of the Information and and Communications Technology (ICT) investment have been incorporated into the category of "Policy Implementation" aspect, considering the potential of the phenomenon well-recognized as "Leapfrog Phenomenon," where new services and technologies spread rapidly, surpassing the technological advancements that developed countries have undergone in developing countries where existing social infrastructure has not yet been established (Crumpler et al., 2020). Indeed, the acceleration of ICT enables these economies to bottom up their economic level and approach the social issues, espcially for the contribution to poverty reduction in the long run (Wasif et al., 2011).

Nonetheless, it remains essential to acknowledge that in advancing economic development, there are no shortcuts to raising income levels without persistent developmental efforts, especially in low-income economies. Consequently, further development of basic social infrastructure remains a critical component of this framework

Methods

Philip (2022) underscores the significance of constructing a qualitative analysis framework for the synthesis of ideas, findings, and concepts from various sources, as well as for hypothesis development. In essence, building a framework serves the purpose of showcasing the research's necessity and providing fresh insights to readers within the relevant field (Philip, 2022). Therefore, employing qualitative analysis to make the strategic framework holds meaningful implications.

To model this BMID, I utilized several methodologies. Firstly, as this is a conceptual framework, I followed the typical five steps for creating one, which involve "1. Selecting a topic," "2. Defining research questions," "3. Conducting research," "4. Balancing variables and establishing variable relationships," and "5. Drawing the conceptual framework" (Philip, 2022). The most crucial aspect of these steps involves identifying variables or entities. Based on the existing literature, the essential entities include GNI per capita and the Poverty Ratio. Another potential variable that can be incorporated is the "Ease of Doing Business Index (EDBI)." These two variables are fundamental components intricately connected to business and economic development, as highlighted by the World Bank (2023). The relationship between GNI per capita

and EDBI could be described as causative, making them the main variables for framework development.

Moreover, it is already evident that EDBI contributes to GNI per capita. More business opportunities lead to higher income generation. Therefore, quantitative analysis is no longer deemed necessary. Instead, qualitative analysis is a more suitable choice for constructing a conceptual framework. I opted for the Grounded Theory Approach (GTA), which involves generating theories through the coding process (William and Moser, 2019). Additionally, I selected document analysis over personal or group interviews to minimize potential biases as much as possible.

Results

In a hypothetical scenario, the final step in developing a BMID framework to address the research question can be outlined as follows.

In the initial phase, development strategies are formulated through an in-depth analysis of the external and industrial environment. Strategies encompass areas such as public services, NGO engagement, and technology transfer, particularly in agriculture and the service industry. The aim is to elevate the income stages within Low and Lower-Middle-Income Countries (LLMICs). It is of utmost importance for governments to gain a comprehensive understanding of the current situation and foster transparent communication about the prevailing conditions.

Depending on the specific income stage of a country, prioritization of development issues is crucial to create a more favorable business climate. These priority areas may include food security, public services (such as education and healthcare), infrastructure development, peace-building efforts, governance enhancement, and social protection measures. Such prioritization, especially in the context of rural development and poverty reduction, is essential for governments operating within constrained budgets. While the identification of priority development issues is a critical step, effective implementation has often been lacking.

Finally, the implementation of business activities can be significantly facilitated through the use of social networking services (SNS) and other digital devices. The proliferation of modern technology, including smartphones, tablets, and laptops, even in LLMICs, can greatly benefit economic endeavors, particularly through popular SNS platforms like Facebook, Twitter, TikTok, and YouTube. These SNS platforms offer opportunities to expand business reach and generate supplementary income, even in developing regions. However, it's important to note that basic literacy and numeracy skills are prerequisites for earning income and escaping poverty. Regular reviews of budgets and ongoing education or training for both business individuals and government agencies are essential for continuous improvement.

Discussion

This paper marks the initial endeavor to establish a novel academic field known as Business Management for International Development (BMID). The primary aim is to contribute to the advancement of developing nations by integrating the existing disciplines of International Development and Business Management. This integration is demonstrated using case studies from lower and lower-middle income economies (LLMICs) across various regions.

While this first attempt at formulating BMID is promising, it also presents certain limitations that can be transformed into opportunities for the further development of BMID, enhancing its academic and practical contributions. These potential areas for growth include:

1. Incorporating Cultural and Historical Perspectives: The current study's focus on the Philippines may limit its generalizability due to the unique characteristics of the region. To overcome this limitation, future research should encompass additional case studies, facilitating the generalization of theories within the BMID discipline.

2. Adapting to Evolving Business Landscapes: The emergence of start-up organizations, including unicorn companies, fintech enterprises, metaverse ventures, and NFTs, has transformed the business landscape. These developments, which gained prominence around 2019, have not only been observed in OECD economies but have also expanded into emerging economies. Recognizing and addressing these changes is essential for updating the BMID framework.

3. Expanding Literature Review: While the current study predominantly focuses on the work of Hayashi, it is likely that other relevant literature exists in the realm of business management for developing countries beyond the scope of Bottom of the Pyramid (BOP) business. Conducting a more extensive literature review can identify additional study gaps, thereby maximizing the potential of realizing the IDBM.

4. Transitioning from Traditional Development Models: Traditional economic development models such as the "Development Stage" model endorsed by scholars like Lewis, Rostow, and Tran may become outdated. The emergence of the "Leapfrog Development Model," where developing countries can rapidly advance by skipping stages, presents a paradigm shift in development theory. Hayashi's work did not address this transition, but it is crucial for BMID to align with this evolving model to enable organizations to adapt swiftly to the changing external environment.

5. Embracing Interdisciplinary Collaboration: For BMID to evolve as a comprehensive interdisciplinary academic discipline, it should integrate other adjacent social sciences, particularly politics, international relations, and sociology. This broader interdisciplinary approach will enhance the effectiveness and relevance of BMID in addressing complex global development challenges.

In summary, while this initial attempt at BMID formulation is promising, addressing these identified areas for improvement can enhance its effectiveness and broaden its scope as a valuable interdisciplinary field for promoting international development through business management

Conclusion

8.1. Interpretation of the Study Result.

This paper embarked on an initial journey toward the establishment of an academic field called Business Management for International Development (BMID). This endeavor involved a thorough examination of the characteristics of Development Economics and International Business Management. Additionally, it entailed a review of Hayashi's existing work in the realm of Development Business Management, uncovering various gaps that must be addressed to autonomously formulate the IDBM. By employing the GTA, the paper developed the fundamental framework of BMID conceptually. This framework logically connects business management with economic development, taking into account the income levels classified as low-income and lower-middle income. The overarching goal is to combat poverty through the effective implementation of business activities. Still, it is important to acknowledge that there are still many critical aspects awaiting further investigation to fully realize the potential of this independent academic discipline.

8.2. Study Limitations

Two remaining challenges in this research can be highlighted as follows:

The first point involves conducting research activities that are more informed by the actual state of poverty reduction policies through business promotion in the LLMICs. While theoretical research is essential, a practical approach to addressing policy issues is also required in development economics. Therefore, there is an outstanding task to engage in research that is aligned with the realities on the ground, which may entail conducting field surveys in the future.

The second point pertains to the continuous improvement and broadening of research approaches through collaborative efforts. While this study attempted a mixed analysis, there is an expectation that new insights can be gained by constructing fresh analytical frameworks from various perspectives in the future. To achieve this, it is desirable to actively incorporate collaboration with not only researchers from outside the field of development economics but also practitioners. Engaging in active discussions and exchanges of ideas with them can not only enhance research capabilities but also lead to the emergence of novel research perspectives

8.3. Study Implications

Two study implication can be given as follows.

The first point, which is particularly crucial within the framework presented in Figure 1, is the importance of identifying challenges and subsequently clarifying the vision, mission, and objectives, which should be shared with policymakers and stakeholders. Specifically, it should be noted that formulating effective development policies becomes exceedingly difficult when there is a

lack of alignment between clear challenges and the overall vision. Therefore, governments of the LLMICs should keep this in mind.

The second point underscores the significance of constructing a framework, using it as a benchmark for policy implementation, and providing feedback. Establishing a strategic framework for addressing policy challenges helps ensure that the direction remains consistent and eliminates concerns about deviation. Furthermore, the process of creating such a framework enhances the ability to view the elements necessary for policy formulation from a holistic perspective, making it valuable training material for future administrative officials.

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DOES TRANSACTION COST AFFECT FARMERS' PARTICIPATION IN CONTRACT FARMING? EMPIRICAL EVIDENCE FROM TANZANIA'S TEA SUBSECTOR

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Abstract. *This paper examines whether transaction costs affect farmers' participation in contract farming focusing in Tanzania's tea subsector. The study was descriptive by design and used primary data collected in a cross-sectional survey from 393 smallholder tea farmers from two regions (Mbeya and Njombe) in Tanzania. Binary Logistic Regression model was used to estimate the effect of transaction cost determinants on farmer's participation in contract farming, focusing on lower and upper tea value chain nodes. Findings show that downward transaction costs significantly negatively impact contract farming participation (P=0.002), while upward transaction costs significantly positively influence participation (P=0.000). Specific downward transaction costs that significantly negatively influence contract farming participation at P=0.05 are time used to understand contract terms, and services delivery waiting time. Moreover, cost to know contract opportunities and terms, visiting frequency to the investor to qualify for contract farming, contract terms rigidity, and contract terms clarity, negatively influence participation but they are not statistically significant at P=0.05. We recommend that, to enhance farmers' participation in contract farming, practitioners and policies should prioritize on reduction of specific downward transaction costs through training farmers and developing transaction cost-cutting policies. Future research can explore transaction costs in contract farming among processors and analysing the reasons for its variations across value chain nodes.*

Keywords: *Transaction cost, farmers' participation in contract farming, downward transaction cost, upward transaction cost, Tanzania.*

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Introduction

Contract farming is a renowned form of vertical integration that benefits farmers by providing them access market for their agricultural products, while buyers are assured a steady supply of the products they demand. Contract farming also helps farmers to overcome various production challenges, including access to extension services, inputs, and production technologies

like irrigation and mechanisation (Dogeje & Ngaruko, 2023; Arouna et al., 2021; Ncube, 2020). It is argued that contract farming accounts for about 15 percent of agricultural output in industrialised nations and is a common method of vertical integration. For instance, it is estimated to contribute to 39 percent of agricultural production in the US, while it contributes to 38 percent of dairy production in German and 75 percent in Japan to grill production (Prowse, 2016; Rehber, 2007; Young & Hobbs, 2002).

In transitional and emerging nations, contract farming is commonly used as a strategy to foster agricultural development, improve market access for smallholder farmers, and overall livelihood of farmers. This farming arrangement is employed at varying degrees in over 110 different nations across the world. For instance, high proportions of corporate farms employing contract farming are found in Europe's Czech Republic, Slovakia, and Hungary, while the proportion of food firms utilising contract farming has increased dramatically in Georgia, Moldova, Armenia, Russia, and Ukraine (Ruml & Qaim, 2020; UNCTAD, 2009; Swinnen & Maertens, 2007).

Moreover, this farming system has expanded quickly throughout Latin America, especially in Mexico, Brazil, Peru, and other nations. Similarly, in Malaysia, Indonesia, Vietnam, India, China, and Pakistan have adopted contract farming in diverse agricultural sectors (Bellemare, 2021). Since the 1980s, contract farming has increased in Sub-Saharan Africa, and many projects are now being started by private entities by using this arrangement. It is estimated that contract farming is practised by around 12% of Mozambique's rural population and accounts for 60% of Kenya's sugar and tea production (Oya, 2011; FAO, 2005; Rehber, 2007; UNCTAD, 2009). In Tanzania, farmers' involvement in contract farming varies across value chains or crops, with certain crops exhibiting stronger farmer involvement than others. For instance, according to a study by URT (2016), 75% of sisal farmers and 49% of sugarcane producers assigned their land to contract farming. Meemken and Bellemare (2019) on the other hand found that the proportion of Tanzanian farmers participating in contract farming is about 77%. These observations demonstrate major differences in contract farming participation levels in Tanzania and beyond.

In Tanzania, tea is a critical cash crop that supports about 2 million people indirectly and employs about 50,000 people directly. It is estimated that Tanzania has about 32,000 smallholder farmers involved in the cultivation of tea with average tea farms totalling less than 3.5 acres. Moreover, Tanzania's tea operations generate about 45 million USD in foreign exchange annually (IDH, 2021a, 2021b; URT, 2023). The government of Tanzania, through Section 40 (1) of the Tanzania Tea Regulations 2010, encourages smallholder tea farmers to market their green leaf tea through contract farming (URT, 2010). Besides, evidence from the literature review demonstrates that contract farming is practised by some smallholder tea growers in the districts involved in this study (Rungwe, Busokelo, and Njombe). For instance, according to IDH (2021a) and IDH (2021b), it is estimated that about 52% of the 6,147 farmers who supplied green leaf tea to the Ikanga Tea Factory in Njombe region, were done through annual sourcing contracts leaving roughly 48% uninvolved. This observation may imply that a sizeable number of smallholder tea farmers are not engaged in this arrangement in the study and potentially across other tea-growing areas in Tanzania. This, in turn, is likely to limit their performance because of limited forward and backward market linkage outcomes, thus limiting their livelihood improvement.

Transaction cost is regarded by several scholars as one of the determinants of farmers' participation in contract farming, besides, there is limited evidence that shows how it affects farmers' participation in contract farming focusing on various nodes of traditional cash crop value chains such as tea, coffee, cotton, cashew nuts, and sisal. Prior research mostly concentrated on the discovery of broad transaction cost factors for instance focusing on the broader transaction cost classification of search, negotiation, and contract enforcement while ignoring individual and specific transaction costs throughout the value chain nodes. For instance, results from various studies including those conducted in Bangladesh, Vietnam, Zimbabwe, Benin, Ethiopia, Kenya, and Tanzania show that farmers' participation in contract farming is significantly impacted by information search, bargaining, enforcement, payment delays, and side selling (Tuyen et al., 2022;

Chazovachii et al., 2021; Arouna et al., 2021; Yeshitila et al., 2020; Maina, 2015; Ngaruko & Lyanga, 2021; Mmbando et al., 2016; Ismail et al., 2015; Msami & Ngaruko, 2014; Coase, 1937). We argue that if transaction cost is not carefully considered and managed using a focused approach, it might be difficult to meaningful reduce the same thus, leaving farmers operating out of this arrangement and missing out its potential benefits. This entails that the advantages of contract farming may be overstated if transaction costs are not properly considered (Rehber, 2007).

This study intends to fill this research gap by adopting a nuanced approach by specifically examining the effect of upward and downward transaction costs on farmers' participation in tea contract farming in Tanzania. Specifically, this paper tests two hypotheses as follows: Ho: Downward transaction costs do not negatively influence farmers' participation in contract farming, and Ho: Upward transaction costs do not negatively influence farmers' participation in contract farming. Testing these two hypotheses will respond to the overarching research question that, Does Transaction Cost Affect Farmers' Participation in Contract Farming? The study findings are critical in transaction cost theory, especially in the classification and quantification of transaction costs focusing on the nodes of the tea value chain. Likewise, understanding various specific transaction costs across the tea value chain nodes is crucial for farmers and processors to engage in meaningful contractual arrangements that focus on addressing critical transaction costs in the context of contract farming participation in Tanzania and other settings across the globe. Furthermore, these research findings can also be applied to other subsectors in Tanzania and beyond, providing insights into the impact of transaction costs on contract farming and other forms of vertical integration participation.

Literature Review

Theoretical Literature Review

Theoretically, contract farming as a form of vertical integrated is considered to be critical in addressing various challenges faced by farmers and processors as a result of different failures in spot markets (Dogeje& Ngaruko, 2023; Arouna et al., 2021; Ngaruko, 2012). This study hinges on the transaction cost theory to explain farmers' decision to participate in contract farming in the tea subsector. Transaction Cost Theory is part of New Institutional Economics (NIE) founded by Ronald Coase in the 1930s and further expanded by Oliver Williamson in the 1970s. This theory assumes bounded rationality and considers institutions as tools for managing transaction costs (Coase, 1937; Williamson, 1975; Williamson, 2000). The theories' main constructs are information search, negotiation, contract enforcement, and bounded rationality. The theory posits that transacting parties use institutional arrangements to maximize exchange benefits (Coase, 1937; Williamson, 1975; Parada, 2002). In the context of this study, the choice of this governance structure may be influenced by transaction costs. Precisely, farmers may choose contract farming when they believe it minimizes the transaction costs associated with market transactions, like search, negotiation, enforcement, and monitoring costs.

To understand how specific transaction costs affect the likelihood of farmers' participation in contract farming or not, this study used three variables from the Transaction Cost Theory (search, negotiation, and search transaction costs) to generate variables of the nuanced upward and downward transaction costs which are based in the tea value chain nodes. Based on this theory, six sub-variables are developed, three for each of the two transaction cost classifications; downward and upward transaction costs, which are the main variables in this study. Specifically, these variables are downward search transaction costs, downward negotiation transaction costs, downward enforcement transaction costs, upward search transaction costs, upward negotiation transaction costs, and upward enforcement transaction costs.

Empirical Literature Review

Contract farming is regarded as an essential mechanism to foster rural development, farmer engagement, market access, household welfare, and household welfare. Moreover, it contributes to boosting output, productivity, and way of life while providing small farmers with worthwhile

chances to participate in commercial markets (Tekalign, 2019; Bellemare, 2021). For example, a study in India by Cariappa et al. (2023) found that contract farming contributes to the reduction of the cost of inputs, increases production, and contributes to the overall improved farm income profit. Another study conducted in Benin by Mounirou and Yebou (2023) revealed that contract farming positively influences farmers' income from parboiled rice. Similarly, a study by Meemken and Bellemare (2019) in six developing countries (Bangladesh, Nigeria, Mozambique, Côte d'Ivoire, Uganda, and Tanzania) found that farmers engaged in contracting farming had higher income, precisely 10 percent more than those not engaged in this arrangement. Likewise, a study in Tanzania by Dogeje and Ngaruko (2023) revealed that contract farming positively influences Greenleaf tea production. These studies underscore that contract farming is critical to improved farmers' performance.

Even though contract farming has several benefits, farmers' participation in contract farming varies in different parts of the world. For instance, in India which is estimated to have at least 90 million farmers, this arrangement is used by 550,000 farmers only. This proportion is approximately 0.6% only of the total Indian farmers (Cariappa et al., 2023; Damodaran & Agarwal, 2021). Likewise, a study by Meemken and Bellemare (2019) in six developing countries revealed a variable level of participation in contract farming across different subsectors, precisely Bangladesh (3%), Nigeria (13%), Mozambique (4%), Côte d'Ivoire (11%), Uganda (7%), and Tanzania (77%), respectively. In the tea subsector in particular, in Kenya for example, it is estimated that about 60 percent of the tea production is done through this system (UNCTAD, 2009; FAO, 2005). In Tanzania, specifically in the Southern Highlands Tanzania where this study was undertaken, it is estimated that over 50 percent of smallholder tea farmers are engaged in contract farming (IDH, 2021a; IDH, 2021b).

To sum up, results from these studies evident that participation in this arrangement may be value chain or geographical location specific. This entails that farmers' decision to participate in contract farming may be attributed to different factors. Additionally, evidence from the literature review indicate that transaction cost plays a pivotal role in influencing farmer's decision to participate in contract farming. The subsequent paragraphs shed light on the literature regarding the influence of transactions on farmers' participation in this farming system. According to Singh (2002), transaction costs are costs related to market exchange. On the other hand Williamson (1975) related transaction costs to asset specificity, frequency, and uncertainty.

This study considers transaction costs as unforeseen expenditures incurred by farmers while using contract farming to receive services at various nodes along the agricultural value chain. The reviewed studies highlight the significance of transaction cost factors influencing farmers' participation in contract farming across different countries and agricultural sectors. Different scholars conceptualise transaction costs in relation to contract farming and overall vertical integration in the agricultural value chain in many ways depending on the location, the tangible and intangible features, and the observable and unobservable components (Pingali et al., 2005; Holloway et al., 2000; Key et al., 2000).

For instance, a study by Chazovachii et al. (2021) discovered that information asymmetry and uncertainty negatively influence participation, emphasizing the significance of information search and contract negotiation costs in Zimbabwe. While this result underscores the significance of transaction cost variables in contract farming, it does not specify the specific nodes in the value chain where transaction costs are critical during contract implementation. On the other hand, a study by Kozhaya (2020) revealed that payment and delivery delays, as well as side selling due to market price changes, negatively affect contract farming effectiveness in Lebanon. Similarly, a study by Tuyen et al. (2022) found that factors like delayed payments and late delivery influence contract farming performance in Vietnam. Connectedly, Rokhani et al. (2020) identified access to extension services as a positive determinant of farmers' participation in contract farming in Indonesia. These studies also reflect various transaction cost determinants influencing farmers' participation in contract farming but do not show which specific nodes of the agricultural value chain have an

impact within those nodes. Specifically, whether they have effects in the downward or upward node of the value chain.

Furthermore, a study in Benin by Arouna et al. (2021) noted that transaction costs related to contract complexity have little bearing on participation, but emphasised the beneficial effects of services obtained through contract farming. Relatedly, Negasi and Mebrahatom (2019) discovered that while contract farming participation is favourably impacted by transaction costs related to projected services, contract schemes in Ethiopia are negatively impacted by transaction costs associated with mistrust and lack of openness. Similarly, in the study by Ewusi Koomson et al. (2022) in Ghana, transaction costs related to service delays have a big impact on farmers' side sales. Likewise, a study in Ethiopia by Yeshitila et al. (2020) revealed that side selling in contract farming is increased by high transaction costs in general, while, in contrast, the same is reduced by trust and satisfaction. Additionally, information asymmetry and transaction costs were found to have a negative impact on farmers' market participation (Rondhi, 2021). These studies too do not provide an aggregated relationship and effect of transaction cost on farmers' decision to engage in contract farming with a focus on backward and forward nodes of the specific agricultural value chain nodes.

Focusing on Tanzania, results from a study by Ngaruko and Lyanga (2021) demonstrated how enforcement costs have a favourable impact on sunflower seed output in Tanzania while transaction costs associated with information search and bargaining have a negative impact. Similarly, according to Msami and Ngaruko (2014), search and screening transaction costs have a substantial impact on institutional marketing arrangements for the poultry industry in Tanzania. Connectedly, according to Mmbando et al. (2016), the choice of farmers' market channel is influenced by transaction cost variables like pricing information search, market access road condition, and business trust. According to Ismail et al. (2015), in Tanzania, farmers' decisions to participate in markets are greatly influenced by transaction costs such as market levy, middlemen charges, transportation costs, and government tax.

These studies also sow inherent limitations when viewed in the value node-specific transaction costs. This entails that looking at transactions using the other scholar's approach used in previous studies cannot aid a nuanced understanding of transaction costs on farmers' participation in contract farming focusing on the downward and upward value chain nodes. This may subsequently limit the targeted development of policies and practices to address specific transaction cost factors effectively to influence farmers' participation in contract farming. This implication may extend to findings in prior studies discussed in the previous paragraphs.

To sum up, based on the reviewed literature it is evident that, although scholars in the reviewed literature emphasize the impact of transactions on farmers' participation in contract farming, a gap still exists in understanding how transaction costs specifically affect farmers' participation in contract farming by focusing on specific nodes of various Agri-value chains, including cash crops like tea, coffee, cotton, and cashew nuts. This study aims to fill this gap by investigating the effects of transaction cost on farmers' engagement in contract farming using a nuanced approach that focuses especially on the upward and downward value chain nodes of the tea subsector in Tanzania. By examining the specific effects of transaction costs at various value chain nodes, the proposed study adds significant knowledge to the field of contract farming and transaction costs, by ensuring that the influence of transaction costs is understood with a focus on the entire value chain and farming contracts lifecycle. This knowledge also will help various actors, including the government to formulate more informed policies and strategies to identify and reduce transaction costs, thus enhancing successful and sustainable contract farming practises.

Methods

Research Design

This research used descriptive approach to estimate the likelihood of farmers' participation in contract farming based on transaction cost variables. This approach formed the basis for testing the null hypothesis as it uncovered trends and patterns in contract farming participation in the research population. This study collected primary data in a cross-sectional study comprising 393

smallholder tea farmers from 37 villages in three districts selected located in Southern Highlands Tanzania based on their participation or non-participation in contract farming in the 2022 tea production season. The specific study districts in the Southern Highlands of Tanzania are Rungwe and Busokelo districts in Mbeya regions and Njombe District Council (DC). These districts were selected because over 70 percent of smallholder tea farmers are in the Southern Highlands of Tanzania (IDH, 2021a; IDH, 2021b). Random sampling was used to maximise the representation of the tea smallholder farmers in this study. Specifically, participants were purposively divided into contract and non-participants (70% and 30% respectively), with random samples drawn from selected clusters, specifically in the selected 37 villages which were selected based on the availability of farmers participating or not participating in contract farming.

Variables Measurement

The dependent variable is farmers' participation in contract farming which is measured as a dichotomous variable (1 if participated, 0 if otherwise). This method makes a clear distinction between participating and non-participating farmers and offers insights into the transaction cost elements affecting farmers' willingness to participate in tea contract farming.

This study used two main independent variables (downward transaction costs (DTC) and upward costs transaction costs (UTC) with, six sub-variables, three for each DTC and UTC in line with Transaction Cost Theory. Specifically, the six specific sub-variables are downward search transaction costs, downward negotiation transaction costs, downward enforcement transaction costs, upward search transaction costs, upward negotiation transaction costs, and upward enforcement transaction costs measured on a five-point Likert scale (1-5), whereby 1 denotes strongly disagree, while 5 mean strongly agree.

Table 1
Transaction Costs Measurement

Contract farming stage	Construct/ Variables	Number of Indicators	Specific transaction cost measurement (indicators)
Downward Transaction Costs (DTC)			
Production {Farm preparation, planting and management (growing)}	DSTC	4	DSTC1: Contract length; DSTC2: Time used to know the contract terms; DSTC3: Cost to know contract opportunities and terms; DSTC4: Visiting frequency to the investor
	DNTC	4	DNTC1: Contract terms rigidity; DNTC2: Contract negotiation frustration; DNTC3: Time to understand contract terms; DNTC4: Comprehension of the contract terms
	DETC	4	DETC1:Delays in receiving the agreed services; DECT2: Reputation of not complying to contract; DECT3: Time use in contract monitoring; DNCT4: Fear of legal reprisal production techniques non-compliance
Subtotal DTC	**3**	**12**	
Upward Transaction Costs (UTC)			
Selling {harvesting (plucking), aggregation sorting and selling}	USTC	4	UTSC1: Frustration to know harvesting and collection dates; UTSC2: Visits to the buyer (investor) to know net amount payable; UTSC3: Cost to know net amount payable; UTC4: Time spent to wait for payment status
	UNTC	4	UNTC1: Price-renegotiation in case of market changes; UNTC2: Frustration with re-negotiation price; UNTC3: Time used to understand revised price setting mechanism; UNTC4: Frustration in agreeing on the net amount to be paid on the acceptable quality supplied
	UETC	4	UETC1: Delays in payments; UETC2: Loss due to quality-based products rejection; UETC3: Product inspection time; UETC4: Side-selling penalty
Subtotal UTC	**3**	**12**	
Total TC	**6**	**24**	

Source: Researcher Constructs, 2023

Specifically, each variable had three constructs with three indicators, resulting in a total of 6 constructs (3 for DTC and 3 for UTC) and 24 indicators (12 for DTC and 12 for UTC). The Likert scale, which was used as a proxy indicator allowed for quantifying farmers' perceptions and opinions on transaction costs, providing nuanced analysis and interpretation of data. Participants rated 24 items (12 for DTC and 12 for UTC) based on their perspectives and experiences in contract farming engagement (see the details in Table 1).

Composite scores were calculated for each of the six constructs in order to evaluate how the various transaction costs in contract farming along the tea value chain nodes were perceived in general. The mean, median, mode, range, maximum, minimum values, and standard deviation were then computed using these scores as indices of central tendency. Each composite score was divided into two mean groups, with the low mean range group designated as low transaction cost and the high mean range group as high transaction cost. This approach which is shown in Table 2, also referred to as the mean range approach, was adapted and modified from a related study carried out by Ngaruko (2022).

Table 2
Data Interpretation Matrix

Variable	Number of Items	Measurement (Mean score)	Mean (M) interpretation
1: DTC			
DSTC	4	4-20	Low=4-11.9; High=12-20
DNTC	4	4-20	Low=4-11.9; High=12-20
DETC	4	4-20	Low=4-11.9; High=12-20
Total TDC	12	12-60	Low=12-35.9; High=36-60
2: UTC			
USTC	4	4-20	Low=4-11.9; High=12-20
UNTC	4	4-20	Low=4-11.9; High=12-20
UETC	4	4-20	Low=4-11.9; High=12-20
Total UTC	12	12-60	Low=12-35.9; High=36-60
Total TC	**24**	**24-120**	**Low=24-71.9; High=72-120**

Source: Researcher's Constructs, 2023 as adapted from Ngaruko (2022)

Structural Equation

This part provides the estimation equations on the likelihood of farmers who participated in contract farming in the tea subsector in the last production season (2022) or beyond. Participation was estimated by using the Binary Logistic Regression model through the following structural equations.

$$\ln(FPCF_j) = f(TC) \tag{1}$$

Whereby:

$\ln(FPCF_j)$ = Log-odds (likelihood) of participation in contract framing for the j^{th} farmer where 1 = log-odd farmer participation in contract farming; 0 = log-odds of non-participation in contract farming in a range of 0 to 1 to the range of -∞ to +∞.

TC=Total transaction.

In Equation 1, the logit transformation extends predicted values from -∞ to +∞. To estimate participation likelihood within the 0 to 1 range, Equation 1 can be reformulated as Equation 2, converting log-odds into probabilities.

$$Probability(FPCF_j) = \frac{\exp(\ln(FPCF_j))}{[1+\exp(\ln(FPCF_j))]} \tag{2}$$

Whereby:

$Probability(FPCF_j)$ = Probability of j^{th} farmer participating in contract farming.

$\exp(\ln(FPCF_j))$ = Exponent of the logit which specifically, undo the logit transformation, to the value of the original odds scale.

$1+\exp(\ln(FPCF_j))$ = Exponent of the logit added to 1.

$\frac{\exp(\ln(FPCF_j))}{[1+\exp(\ln(FPCF_j))]}$ = Estimation of probability $(FPCF_j)$, which is computed by dividing the exponent of the logit by the sum of the exponent and 1 to ensure that the probability falls from the range of 0 to 1. This entails probability $(FPCF_j)$ is estimated by applying the logistic function to the log-odds by ensuring it remains within the 0 to 1 range.

Therefore, as indicated in Table 2, transaction cost is a composite score of downward and upward transaction cost, thus, Equation 1 may be re-written into Equation 3.

$$\ln(FPCF_j)=f(DTC,UTC) \tag{3}$$

Whereby:
DTC=Downward Transaction costs
UTC=Downward Transaction costs
Structurally, Equation 3 can be presented as in Equation 4 when an error term is introduced.

$$\ln(FPCF_j)=\beta_0+\beta_1 DTC_j+\beta_2 UTC_j+\epsilon_j \tag{4}$$

Whereby:
j=Farmer identity where j=1-n
i=disaggregated variable where i=1-n
β_1 = the regression coefficient
ϵ = error term
As indicated in Table 1, DTC and UTC depend on the variables described in equations 5 and 6.

$$DTC=f(DSTC,DNTC,DETC) \tag{5}$$

$$UTC=f(USTC,UNTC,UETC) \tag{6}$$

Following disaggregation of UTC and DTC in equations 5 and 6, to establish the effect of disaggregated transaction cost of downward and upward indicators on log-odds of farmers' participation, Equation 4 may be re-written into Equation 7.

$$\ln(FPCF_j)=\beta_0+\beta_1 DSTC_{ij}+\beta_2 DNTC_{ij}+\beta_3 DETC_{ij}+\beta_4 USTC_{ij}+\beta_5 UNTC_{ij}+\beta_6 UETC_{ij}+\epsilon_j \tag{7}$$

Whereby:
DSTC=Downward Search Transaction Costs
DNTC=Downward Negotiation Transaction Costs
DETC=Downward Enforcement Transaction Costs
USTC=Upward Search Transaction Costs
UNTC=Upward Negotiation Transaction Costs
UETC=Upward Enforcement Transaction Costs

Data Processing and Analysis

The collected data were cleaned using Excel before being loaded into IBM SPSS Statistics Version 26 for both descriptive and inferential statistical analysis. Descriptive analysis of the predictor and outcome variables was performed and presented in the forms of tables and figures. Binary Logistic Regression Model was used for the inferential statistical analysis to estimate the probability of farmers' participation in contract farming. This model was also used to test the null

hypothesis for this study. The criteria for accepting or rejecting the null hypotheses were based on a 5% significance level, indicating a 95% confidence level. Before, running the Logistic Regression Analysis, relevant assumptions, including, validity, reliability, normality, significant outliers tests, multicollinearity test, Box-Tidwell test, and overall model fitness were tested and passed.

Results

Descriptive Results

The findings show that the majority of participants were male (57%), while females constituted 43 percent of the sample. Respondents' ages ranged from 20 to 80 years, with an average age of 47 years. Notably, this average age is slightly below the African average age of farmers in agriculture, which stands at 60 years (FAO, 2014). Connectedly, about 90 percent of the participants had completed primary school while 10 percent had not completed primary school. The average household size was 5.2 persons, which is slightly higher than the national average (4.9 persons) (URT, 2019). Likewise, the average farm size planted with tea, average production and income from tea were 1.5 acres, 3.3 tons, and Tanzania Shillings (TZS) 1.1 million, respectively.

In the context of contract farming participation, the research reveals that 70% of smallholder tea farmers engaged in contract farming, while the remaining 30% did not participate in this farming system. Moreover, the study findings indicate that smallholder tea farmers, in general, have a perception that transaction costs associated with farmers' participation in contract farming are relatively high (Table 3). This is evident from the overall composite score mean of Total Transaction Cost (TTC), which stands at approximately 74 and falls within the high-cost range of 72 to 120, as established in this study (Table 2). This finding emphasises how crucial it is to address transaction costs as potential obstacles to farmers' participation in contract farming.

Table 3
Transaction Cost Descriptive Results (n=393)

Variable	Measure of central tendency					Cost classification
	Mean	Median	Mode	Minimum	Maximum	
Downward Transaction Cost (DTC)						
DSTC	9.1	9	8	4	14	Low
DNTC	16	16	16	12	20	High
DETC	16.5	16	16	12	20	High
TDTC	**41.5**	**41**	**40**	**30**	**52**	**High**
Upward Transaction Cost (UTC)						
USTC	8.9	9	9	5	13	Low
UNTC	10.3	10	10	4	20	Low
UETC	13.0	13	14	5	20	High
TUTC	**32.2**	**32**	**34**	**16**	**44**	**Low**
TTC	**73.8**	**74**	**79**	**55**	**91**	**High**

Source: Research Data, 2023

In line with the classification threshold for the transaction costs composite scores in Table 1, when we examine upward and downward transaction costs, the mean value of the downward transaction costs (41.5) is higher than the mean value of downward transaction costs (32.2) (see the details in Table 3). This shows that farmers regard the downward nodes of the tea value chain as having more difficulties or complexities related to transaction costs associated with contract farming engagement than the upward nodes of the tea value chain. Moreover, in the downward value chain node, Downward Negotiation Transaction Costs (DNTC) and Downward Enforcement Transaction Costs (DETC) were thought to be higher than Downward Search Transaction Costs (DSTC) (see the details in Table 3). In contrast, in the upper-value chain node, only Upward Enforcement Transaction Costs (UETC) were thought to be higher than Upward Search Transaction Costs (USTC) and Upward Negotiation Transaction Costs (UNTC) (see the details in Table 3).

Inferential Statistics Results

Logistic Regression Results

Prior to conducting the Logistic Regression Analysis, we assessed and confirmed the fulfilment of key assumptions, such as validity, reliability, normality, tests for significant outliers, multicollinearity, the Box-Tidwell test, and the overall model fitness. For instance, exploratory Factor Analysis was used to test construct validity, whereby both discriminant and discriminant factor loading above 0.7 factor loading for all six constructs which is above the acceptable thresholds for all constructs (Fabrigar & Wegener, 2011). Reliability was checked by using Cronbach's alpha, whereby all six constructs scored 0.7 which is also above the minimum threshold (Pallant, 2016; Nunnally, 1978). For the Box-Tidwell Test, the two main variables, the logistic transformation between downward and upward composite scores yielded a p-value ($p > 0.05$) which is nonsignificant showing that this assumption is assumed. For significant outliers test was done resulting in the removal of 16 observations with Cook's values exceeding 0.01, equivalent to one-fourth of the sample size (393/4), from the model (Cook & Beckman, 2006). Consequently, the regression model was executed using 377 observations.

Aggregated Effects of Downward and Upward Transaction Costs on FPCF

Precisely, the Binary Logistic Regression model was used to examine the impact of upward and downward transaction costs on farmers' willingness to engage in contract farming. Two steps were taken in the analysis. First, regression was carried out using equation 2 on aggregated downward and upward transaction cost factors. Following equation 7, a second regression analysis was performed on disaggregated transaction cost indicators. The results for the first regression step are presented in Table 4.

Table 4
Aggregated TC Indicators Logistic Regressions

Model		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1a	TDTC	-0.089	0.029	9.721	1	0.002*	0.915	0.865	0.968
	TUTC	0.122	0.03	16.57	1	0.000*	1.129	1.065	1.197
	Constant	0.881	1.213	0.527	1	0.468**	2.412		

(a) Variable(s) entered on step 1: TDTC, TUTC.
(b) Dependent variable: Farmers' PCF; Sig=0.000; Nagelkerke R Square= 0.08; Correct Classification=74.3%;
*Significant at P = 0.05; **Significant at P = 0.1; n=377

Source: Research Data, 2023

As indicated in Table 4, the findings show that total downward transaction cost (TDTC) exhibits a significant negative effect on farmers' participation (P=0.002), as such the null hypothesis is not supported. In contrast, total upward transaction cost (TUTC) demonstrates a significant positive effect on farmers' participation in contract farming at a 5 percent precision level, thus, the null hypothesis is accepted. These results imply that while upward transaction costs may motivate farmers to join in contract farming, downward transaction costs may serve as a barrier to participation. Further results on the disaggregated transaction cost indicators are shown in Table 5.

Effects of Downward Transaction Costs on FPCF

On downward value chain node, the results show that DSTC1 and DSTC2 had a positive effect on farmers' desire to engage in contract farming (DSTC1 statistically significant and DSTC2 not statistically significant at P=0.05), but DSTC3 and DSTC4 had a negative effect but both not statistically significant at P=0.05. These findings entail that, shorter contracts and simpler conditions increased involvement, whereas higher learning costs for contract opportunities and frequent investor visits decreased it. These findings concur with those of the study by Arouna et al. (2021) showing that contract complexity has no bearing on farmers' participation.

Moreover, DNTC2 (contract negotiating irritation) and DNTC3 (time needed to understand contract conditions), negatively influence farmers' participation in contract farming (DNTC2 is not statistically significant, while DNTC3 is statistically significant at P=0.05). Conversely, DNTC1 (rigidity of contract conditions) and DNTC4 (complexity of legal papers) have a positive impact on

participation. These results support earlier studies that point to the possibility that contract farming may be discouraged or encouraged depending on specific negotiating costs (Chazovachii et al., 2021; Arouna et al., 2021). In line with the findings of Ngaruko (2022) and Kozhaya (2020) research, DETC2 (reputation for not upholding contract conditions) and DETC3 (time spent on contract monitoring) had a positive effect on farmers' participation but both are not statistically significant at P=0.05.

Table 5
Results for Disaggregated TC Logistic Regression Indicators

Model Variable (a)	Item	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Downward Search Transaction Cost (DSTC)	DSTC1	0.796	0.302	6.942	0.008*	2.217	1.226	4.008
	DSTC2	0.201	0.301	0.447	0.504	1.223	0.678	2.207
	DSTC3	-0.104	0.285	0.134	0.715	0.901	0.516	1.575
	DSTC4	-0.382	0.309	1.526	0.217	0.682	0.372	1.251
Downward Negotiation Transaction Cost (DNTC)	DNTC1	0.874	0.302	8.343	0.004*	2.396	1.324	4.334
	DNTC2	-0.572	0.34	2.827	0.093**	0.564	0.29	1.099
	DNTC3	-1.027	0.345	8.879	0.003*	0.358	0.182	0.704
	DNTC4	0.121	0.327	0.137	0.711	1.129	0.594	2.143
Downward Enforcement Transaction Cost (DETC)	DETC1	-0.618	0.301	4.208	0.040*	0.539	0.299	0.973
	DETC2	0.099	0.302	0.109	0.742	1.105	0.612	1.995
	DETC3	0.473	0.333	2.022	0.155	1.605	0.836	3.082
	DETC4	-0.46	0.27	2.908	0.088**	0.631	0.372	1.071
Upward Search Transaction Cost (USTC)	USTC1	0.452	0.244	3.423	0.064**	1.571	0.974	2.536
	USTC2	-0.316	0.27	1.372	0.241	0.729	0.43	1.237
	USTC3	0.084	0.225	0.139	0.709	1.088	0.699	1.691
	USTC4	-0.265	0.265	0.999	0.318	0.767	0.456	1.29
Upward Negotiation Transaction Cost (UNTC)	UNTC1	0.84	0.288	8.491	0.004*	2.316	1.316	4.074
	UNTC2	-0.031	0.352	0.008	0.931	0.97	0.487	1.932
	UNTC3	0.137	0.281	0.239	0.625	1.147	0.661	1.991
	UNTC4	-0.094	0.353	0.071	0.79	0.91	0.456	1.817
Upward Enforcement Transaction Cost (UETC)	UETC1	-0.082	0.252	0.105	0.746	0.922	0.562	1.511
	UETC2	0.566	0.274	4.274	0.039*	1.76	1.03	3.009
	UETC3	-0.356	0.301	1.4	0.237	0.701	0.389	1.263
	UETC4	0.167	0.255	0.43	0.512	1.182	0.718	1.946
Constant	3.087	1.561	3.913	0.048	21.912			

(a) Variable(s) entered on step 1: DSTC1, DSTC2, DSTC3, DSTC4, DNTC1, DNTC2, DNTC3, DNTC4, DETC1, DETC2, DETC3, DETC4, USTC1, USTC2, USTC3, USTC4, UNTC1, UNTC2, UNTC3, UNTC4, UETC1, UETC2, UETC3, UETC4

(b) Dependent variable: Farmers' PCF; Sig=0.000; Nagelkerke R Square= 0.287; Correct Classification=78.%; *Significant at P = 0.05; **Significant at P = 0.1 ; n=377

Source: Research Data, 2023

The positive influence of DETC2 shows a negligible impact of the reputation for non-compliance in participation. Farmers are more motivated, confident, and engaged with more monitoring (DETC3). In line with theoretical expectations, DETC1 (delays in receiving agreed services) and DETC4 (fear of legal retaliation) have a negative effect on participation and serve as impediments to farmers' involvement in contract farming (DETC1 is statistically significant, while DETC4 is not statistically significant at P=0.05).

Effects of Downward Transaction Costs on FPCF

Focusing on the upward value chain node, the research demonstrates a positive link between USTC1 (efforts to establish net harvesting dates) and USTC3 (costs for collecting net payment information) with farmers' engagement in contract farming, but both are not statistically significant at P=0.05. This contradicts earlier research (Chazovachii et al., 2021; Ruml & Qaim, 2020; Maina, 2015) that suggests that lower participation is negatively impacted by greater search transaction costs. The positive connections imply that investment in information collecting and proactive

management have a positive impact on farmers' participation in contract farming. Furthermore, contract farming participation is adversely affected by USTC2 (visits to the buyer to assess payment) and USTC4 (waiting for payment status), but both are not statistically significant at P=0.05. Similar results from other studies emphasise the deterrent effect of payment delays on farmers' participation. Long waiting times raise uncertainty, which may make farmers less likely to participate (Ewusi Koomson et al., 2022; Tuyen et al., 2022; Kozhaya, 2020).

Discussion

Moreover, the study's findings show that, farmers' willingness to engage in contract farming is negatively impacted by dissatisfaction with price renegotiations (UNTC2) and issues reaching an understanding on net payments (UNTC4), but both are not statistically significant at P=0.05. In addition, farmers' engagement is positively impacted by their ability to renegotiate prices as a result of market changes (UNTC1) and their comprehension of the updated price-setting process (UNTC3) (UNTC1 statistically significant, while UNTC3 is not statistically significant at P=0.05). This result is in contrast to earlier research by Ngaruko and Lyanga (2021) and Msami and Ngaruko (2014), but it emphasises the significance of pricing flexibility and transparent methods for promoting farmers' participation.

Furthermore, UETC1 (delays in payments) and UETC3 (green leaf tea inspection time) have a negative impact on farmers' participation in contract farming, but both are not statistically significant at P=0.05. This is consistent with earlier research, which demonstrates the importance of effective payment procedures and prompt inspections for fostering participation (Ewusi Koomson et al., 2022; Kozhaya, 2020). Relatedly, the fact that UETC2 (product rejection losses) and UETC4 (side-selling fines) have a favourable impact on participation (UETC2 is statistically significant, while UETC4 is not statistically significant at P=0.05). Furthermore, according to these findings, farmers place high importance on quality assurance and the necessity of contract enforcement (Ngaruko, 2022; Tuyen et al., 2022; Kozhaya, 2020). Penalties deter side-selling and encourage active involvement in contract farming.

Conclusion

This paper aimed to determine if transaction costs, both downward and upward, affect farmers' participation in Tanzania's tea subsector contract farming, testing two hypotheses against negative influences. The study findings reveal that total downward transaction cost (TDTC) has a significant negative impact on participation, thus, the null hypothesis is not supported. Nevertheless, total upward transaction cost (TUTC) has a significant positive impact on farmers' participation in contract farming, thus the null hypothesis is supported. This entails, that the increase in farmers' participation in contract farming due to an increase in upward transaction cost implies that farmers have no significant influence in mitigating upward transaction cost (cost of selling green leaf tea) as these are induced to them by the tea monopsonist. Instead, farmers can only cope with the increasing marketing by effectively participating in contract farming with the monopsonist. This study concludes that downward transaction costs negatively affect tea contract farming participation, while upward transaction costs exhibit a positive influence. Moreover, the disaggregated transaction cost metrics show how particular factors affect farmers' participation in more detail both in the downward and upward value chain nodes.

We recommend that stakeholders, including the government, investors, and farmers should adopt a nuanced approach in transaction cost identification, measurement, and reduction strategies and policies focusing on upward and downward value chain nodes. This approach will contribute to a targeted and effective reduction of transaction costs related to farmers' participation in contract farming with a lens of agri-value chain nodes. More precisely, the strategies and policies focus should be prioritised on reducing specific downward transaction costs like time used to understand the contract terms and time to wait to receive the agreed services. Improved farmers' participation in contract farming is likely to improve their performance in terms of production output, green leaf income, and livelihood. Further studies may consider exploring transaction cost factors on contract farming participation focusing on other value chain actors like processors as well as studying

factors affecting transaction cost variations across value chain nodes. Moreover, a similar study may be replicated in other crops in Tanzania and beyond.

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THE IMPACT OF SHOCKS ON THE VOLATILITY OF THE DUBAI GENERAL MARKET INDEX (DFMGI), USING ASYMMETRIC GARCH MODELS

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Abstract. *This research paper aims to study the effects of good and bad news on the volatility of the Dubai General Market Index (DFMGI) return series for 5,5 years during the period spanning from January 1, 2018, to June 30, 2023, using the asymmetric GARCH models: EGARCH(1,1), TGARCH(1,1) and PARCH(1,1). The study concluded that positive and negative shocks asymmetric impact fluctuations in price returns in the Dubai financial market. This means that negative shocks significantly impact volatility more than positive shocks. The study also concluded that the best asymmetric GARCH model among the three used is the PARCH(1,1) model.*

Keywords: *volatility, asymmetric GARCH model, positive and negative shocks, Dubai financial market.*

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Introduction

Financial time series exhibit heterogeneity of volatility or clustered volatility, which vary over time due to a variety of factors, such as unexpected events, news releases, and changes in investor sentiment. This is the reason why many investors and financial analysts are concerned about speculative price fluctuations in the market that result in uncertainty regarding the return on invested assets. In order to predict and anticipate future fluctuations in financial markets, researchers and stakeholders have been able to design and develop quantitative statistical models that account for these fluctuations and oscillations. Among these models are the symmetric GARCH model (with symmetric effects) (Bollerslev, Chou, & Kroner, 1992)، (Engle & Bollerslev, 1986)، (Engle & Patton, 2001), which are represented by generalized autoregressive models subject to heterogeneity of variance, symbolized by the abbreviation (GARCH), and are suitable for measuring the variation affecting the value of Balance in the estimated value of financial assets It is considered to be a suitable method and tool to measure the variability and deviation affecting the value of the Balance in the estimated value of financial assets. The second type of GARCH model is called a Modified Model and takes into account nonlinear or asymmetric effects in financial valuations or the impact of unexpected events. Examples of these derived models include the EGARCH (Daniel B, 1991) (Theodossiou, 1994) (Koutmos & Theodossiou, 1994), TGARCH

(Jean-Michel, 1994), PGARCH (Ding, Granger, & Engle, 1993), and IGARCH models, which take into account asymmetries and asymmetric phenomena in the value distribution. These models have contributed to estimating the volatility of financial assets and forecasting future fluctuations through these models.

One of the most significant financial markets in Arab nations is thought to be the Dubai Financial Market. This market, like other financial markets, is characterized by financial volatility in the returns of its indicators. These fluctuations must be researched and analyzed by modeling the fluctuations that take place across the study periods. We choose to employ asymmetric GARCH models as a result. It is derived from the generalized autoregressive conditional heteroscedasticity (GARCH) model, represented by EGARCH(1,1), TGARCH(1,1), and PARCH(1,1), which is regarded as the key to handling cluster in time series fluctuations as well as the analysis of the impact of positive and negative shocks on these fluctuations. Therefore, the following topic is the subject of our research: What effects do positive (good news) and negative news have?

Research Hypothèses

H1: Volatility shocks will be highly persistent in Dubai financial market returns.

H2: Dubai Financial Market Index DFMGI returns are equally sensitive to good and bad news.

Research Methodology

This study uses the GARCH model and its derivatives to model the volatility of stock returns in the financial market (Dubai); the ARMA model is generally more useful for modeling time series data, but conditions must be met for the remaining models:

- The mean error is zero:

$$E\left(\varepsilon_t\right)=0$$

- The variance of the errors is uniform (variance is constant with respect to time):

$$V(\varepsilon_t)=\sigma^2$$

- There is no autocorrelation between errors:

$$Cov(\varepsilon_t,\varepsilon_{t-1})=0$$

Series can be smoothed on average, but it is difficult to smooth variance (constancy of variance), especially when analyzing financial time series. The instability of variance indicates the existence of fluctuations in time series, and to address the problem of fluctuations, (Engle, 1982) proposed an autoregressive model (ARCH model) subject to heterogeneity in the variance of the residuals (errors) to solve the problem that the ARMA model suffers especially in time series. After determining the existence of the ARCH effect, an autoregressive model conditional on heterogeneity in the variance of generalized residuals (GARCH model) was developed.

Literature Review

1.1. ARMA Model

Alexander (2001) suggested that the conditional mean equation should be in one of the following states

- Random walk model:

$$r_t=c+\varepsilon_t$$

- First order autoregressive model:

$$r_t=c+\lambda r_{t-1}+\varepsilon_t$$

- Any of the model ARMA

r_t : Is the series of returns in financial series, c : average returns.

In this study, we will rely on the ARMA(p,q) model to represent the conditional average equation. The ARMA model, which was proposed by Box and Jenkins (1976), is an autoregressive moving average model that is denoted by the symbol ARMA (p,q).

$$y_t = \mu + \sum_{i=1}^{p} \varphi_i y_{t-1} - \sum_{j=1}^{q} \theta_j \varepsilon_{t-j} + \varepsilon_t \tag{1}$$

$$\varphi_p(\beta) y_t = \theta_q(\beta) \varepsilon_t \tag{2}$$

If the series is averaged, the model is called an autoregressive integral moving average model (ARIMA), called ARIMA (p, d, q), with the following Equation 3:

$$\varphi_p(\beta)(1-\beta)^d y_t = \theta_q(\beta) \varepsilon_t \tag{3}$$

1.2. The ARCH conditional autoregressive model of heteroscedasticity

The ARCH model introduced by Robert Engle in 1982, is a statistical model that is used to describe the volatility of a time series.

: denotes the rank of the ARCH model and the number of model parameters. The equation for the ARCH model is of order : $(p \geq 1)$ and is given by: (Engle R. F., 1982)

$$r_t = \mu + y_t \tag{4}$$

$$y_t = h^2 \varepsilon_t \quad \varepsilon_t \to iidN(0,1) \tag{5}$$

$$y_t = \alpha_0 + \alpha_1 y_{t-1}^2 + \ldots\ldots + \alpha_p y_{t-p}^2 \tag{6}$$

r_t : A chain with no links is called a bounce chain.

μ: Mean bounce series

ε_t : Series of independent identically distributed variables following a standard normal distribution with mean (0) and variance (1);

$\alpha_0 > 1$

$\alpha_i > 0$ For all $i > 0$

α_0, α_1 : Model parameters

h_t : Conditional variance, which is a linear function of the square of the error (residual) and the past observations. Positive constraints on the model parameters guarantee a positive conditional variance. Equation (7) represents the instability equation and can be formulated as follows:

$$h_t = \alpha_0 + \sum_{i=1}^{p} \alpha_i y_{t-1}^2 \tag{7}$$

The unconditional variance of y_t is defined by the following relation:

When P = 1, the model is first order ARCH(1), and the conditional variance formula is as in Equation (8):

$$h_t = \alpha_0 + \alpha_1 y_{t-1}^2 \tag{8}$$

1.3. The Generalized ARCH (GARCH Model)

The GARCH (p,q) model is an extension of the ARCH model, as it requires more parameters to accurately describe the inhomogeneity in the series. (Özkan, 2004, p. 28). It is given in the following mathematical formula: (Emmanuel Alphonsus Akpan, 2017, p. 113)

$$x_t = \sigma_t + \varepsilon_t \tag{9}$$

$$\sigma_t^2 = \alpha_0 + \alpha_1 x_{t-1}^2 + \cdots + \alpha_p x_{t-p}^2 + \beta_1 \sigma_{t-1}^2 + \cdots + \beta_q \sigma_{t-p}^2 \tag{10}$$

Where:

$$\alpha_i \geq 0, i = 1, \ldots, p, \beta_j \geq 0, j = 1, \ldots, q, \alpha_0 > 0$$

The following is the GARCH(1,1) model's mathematical formula (Marie-Eliette Dury, 2018):

$$x_t = \sigma_t + \varepsilon_t \tag{11}$$

$$\sigma_t^2 = \alpha_0 + \alpha_1 x_{t-1}^2 + \beta_1 \sigma_{t-1}^2 \tag{12}$$

If $(\alpha+\beta)\geq 1$: The effect of the oscillation resulting from the shock will continue into the future, as the value of the variation increases with the passage of time, which is called explosive oscillation.

However, one of the conditions of this model is that $(\alpha+\beta)<1$, which, when it approaches 1, means that past shocks and fluctuations are continuous with respect to future fluctuations but gradually decrease over time, and this process is called the shift-to-the-mean property (Rousan & Alkhouri, 2005, p. 106).

1.4. Asymmetric GARCH Family Model

Securities tend to fluctuate less when returns increase and more when returns decrease, a phenomenon known as the leverage effect. Asymmetric GARCH models, such as the Generalized Exponential Conditional Variance Heterogeneity (EGARCH) model, can be used to model this effect (EGARCH) (By & Nelson, 1991), Thresholded ARCH (TGARCH) (Lawrecne, Ravi, & David, 1993), and PGARCH (Zhuanxin, Clive, & Robert F, 1993).

1.4.1. The Exponential GARCH Model

This model emerged as a complement to the ARCH and GARCH models to address the limitation of negative variation in the GARCH model. By avoiding the positive constraints on coefficients α_i and β_j , it is known as the exponential generalized autoregressive conditional heteroskedasticity (EGARCH) (p.q) model, and the conditional variance equation is as follows:

$$\log(h_t^2) = \alpha_0 + \sum_{i=1}^{p} \alpha_i \left[\left| \frac{\varepsilon_t - 1}{h_t - 1} \right| - \sqrt{\frac{2}{\pi}} \right] + \sum_{j=1}^{q} \beta_j \log(h_{t-1}^2) - \sum_{k=1}^{r} \gamma_k \frac{\varepsilon_t - 1}{h_t - 1} \tag{13}$$

$\log(h_t^2)$: The logarithm of conditional variance and previous values of errors are represented by the parameters of « the log-volatility model ».

$\alpha_0, \alpha_1, \beta, \gamma$: The parameters of the log-volatility model.

γ: The scale of the model is asymmetric and represents the leverage effect.

$\gamma=0$: The model is symmetrical.

$\gamma<0$: Leverage effect is the phenomenon where negative shocks have a larger impact on volatility than positive shocks

$\gamma>0$: Positive shocks have a larger impact on volatility than negative shocks.

1.4.2. Threshold GARCH Model

Known as the threshold ARCH model, proposed by (Engle & Bollersleve, 1986) and developed by researchers (Rabemananjara & Zakoian, 1991) and called TGARCH the general equation of the TGARCH model is given as follows (Robert F & Victor K, 1993) :

$$r_t = \mu + \varphi r_{t-1} + r_t \tag{14}$$

$$\sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \gamma d_{t-1} \varepsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2 \tag{15}$$

d_{t-1} : Dummy variable.

$$\begin{cases} d_{t-1} = 0; if\ \varepsilon_{t-1} < 0 : badnews \\ d_{t-1} = 1; if\ \varepsilon_{t-1} \geq 0 : goodnews \end{cases} \tag{16}$$

The leverage effect parameter or asymmetry parameter is denoted by the symbol gamma (γ). Good news has an impact on (α_1), whereas bad news has an impact on ($\alpha_1+\beta_1$), if $\gamma=0$, the model reverts to the conventional GARCH formula. Therefore, negative shocks have a bigger impact on than positive shocks if (ε_{t-1}^2) and significant. (Suliman & Peter, 2012, p. 165).

1.4.3. Power GARCH (PARCH) model

This model was developed by Granger and Engel (1993) to investigate the asymmetric property of volatility (Zhuanxin, Clive, & Robert F, 1993). Unlike the GARCH models, the leverage coefficient was used in the modeling (Qamruzzaman, 2015) (Siourounis, 2002).

$$\sigma_t^{\delta} = \alpha_0 + \sum_{i=1}^{p} \alpha_i \left(\left| \mu_{t-1} \right| - \gamma_i \mu_{t-1} \right)^{\delta} + \sum_{j=1}^{q} \beta_j \sigma_{t-j}^{\delta} \tag{17}$$

This form requires the following:

$$\begin{cases} \alpha_0 > 0 \\ \delta \geq 0 \\ \alpha_i \geq 0 \\ -1 < \gamma_i < 1 \\ \beta_j \geq 0 \end{cases} \tag{18}$$

Where: δ is the force coefficient in the model, and the coefficients: $\alpha_i, \beta_j, \gamma_i$ are the same as the coefficients presented in the previous models. However, the power δ to which the squared standard deviation σ_t will be raised is estimated rather than pre-imposed and determined as in other GARCH models.

Methods

The study data, represented by 2007 daily observations of the closing prices of the DFMGI general index, covering the period extending from 01/01/2018 to 06/30/2023, was obtained from the Dubai Financial Market. As for the returns of the DFMGI general index, which we symbolize (r_t).

At time t it is obtained by the logarithm of the DFMGI index (*P*), which is given by the following formula:

$$r_t = \log\left(\frac{P_t}{p_{t-1}}\right)$$

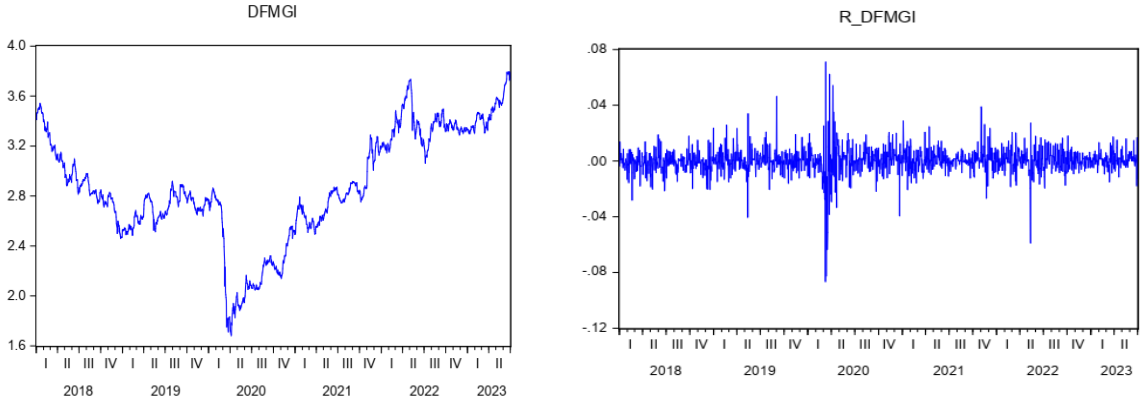

Figure 1. The trend Price and Return of the DFMGI Index during the sample period

Results and Discussion

3.1. Descriptive Statistics for Price Index (DFMGI) and the Return Index (DFMGI):

We present some descriptive statistics in the table to show the distributional characteristics of the daily returns of the DFMGI general index over the analyzed period.

Table 1
Statistics for Price Index (DFMGI) and the Return Index (DFMGI)

	Price index (DFMGI)	Return index (DFMGI)
Mean	2,873136	4,42 x 10^{-5}
Median	2,820855	0,000115
Std. Dev.	0,445245	0,008312
Skewness	-0,263644	-0,826927
Kurtosis	2,585580	24,04872
Jaque-Bera	37,59387	37260,11
Probability	0,000000	0,000000
Observations	2007	2007

Source: The outputs of Eviews.12

Following the results presented in the table above. We observe that the asymmetric swap (Skewness = - 0,826927) is negative for the general index return series, indicating that the return series is asymmetric (left tilt), and also indicates that the returns are powered by negative shocks (bad news) more than saturated opposition (useful news), while its total flatness (Kurtosis = 24,04872) is greater than 3, it expresses how thick the distribution is, and thus confirms the saying that the daily returns series of the general index does not follow the distribution, and this is confirmed by the value of (Jaque-Bera) which is equal to 37260,11 a potential value (Probability = 0,000000 < 0,05).

3.2. Stability test

We use the Augmented Dickey-Fuller (ADF) test to determine whether the daily price index and returns are stationary or contain a unit root (Dickey & Fuller, 1981). After determining the automatically predetermined lag length (maxlag = 25), and based on the Schwarz criterion, we arrive at the results shown in the table below (Table 2).

It is clear from the results of the stability test (ADF) that the daily price index series (DFMGI) is not stable at the level, and therefore it contains the unit root. Unit.

Table 2
Stationarity test for index and Index return (DFMGI)

ADF test for Index					
			Critical values		
		Test statistic	1%	5%	10%
DFMGI index	Intercept	-0,766039 (0,8278)	-3,433412	-2,862779	-2,567476
	Trend and intercept	-1,944126 (0,6307)	-3,962625	-3,412051	-3,127937
	None	0,175951 (0,7372)	-2,566116	-1,940982	-1,616593
ADF test for Return					
			Critical values		
		Test statistic	1%	5%	10%
DFMGI index return	Intercept	-39,98924 (0,0000)	-3,433412	-2,862779	-2,567476
	Trend and intercept	-40,06144 (0,0000)	-3,962625	-3,412051	-3,127937
	None	-39,99815 (0,0000)	-2,566116	-1,940982	-1,616593

Source: The outputs of Eviews.12

3.3. Quantile-Quantile (Q-Q) Plots

In addition to a descriptive analysis of the data, a graphical representation (Q-Q) is needed to know if a series of daily returns of a general index follows a normal distribution. This indicates that the normal distribution does not apply to this data, which is a general characteristic of financial time series.

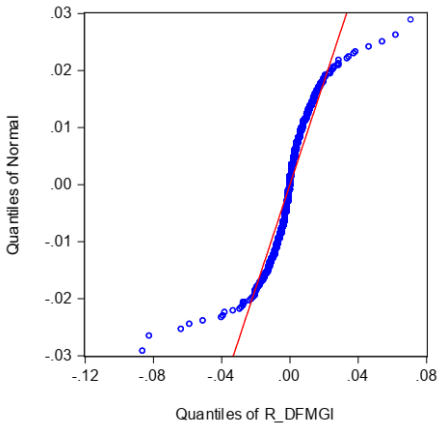

Figure 2. Quantiles of DFMGI Returns

3.4. ARCH effect Test

We test the effect of ARCH on the remainder of the return serie related to the returns of the DFMGI general index (Table 3).

Table 3
ARCH-LM Test results

Heteroskedasticity Test : ARCH			
F-statistic	247.6484	Prob. F(1,2002)	0.0000
Obs*R-squared	220.6067	Prob. Chi-Square(1)	0.0000

Source: The outputs of Eviews.12

Based on the ARCH-LM test, we can check the presence of a trace of ARCH in the residue. According to the results presented in Table 3.

The probability value for both (Obs*R-Squared = 220,6067{0,0000} and F-Statistic = 247,6448{0,0000}) is less than 0.05, and we chose a lag period of 1 to incorporate the ARCH effect. According to the results, the null hypothesis on No ARCH effect is rejected. This means that

the residuals are characterized by the presence of ARCH effect. In other words, heteroscedasticity exists.

3.5. Selection of the Optimal asymmetric GARCH Model

To determine the optimal model among the asymmetric GARCH models, we rely on three criteria : the Akaike information criterion (AIC) (Akaike, 1974), the Schwartz information criterion (SIC) (Schwartz, 1978), and the log likelihoods criterion (LogL). The optimal model is the one that has the lowest AIC and SIC values and the highest LogL value.

Table 4

Selecting the optimal model for the distiribution

	Model	Distribution	LogL	AIC	SIC
1	TGARCH (1,1)	Normal (Gaussian)	7131,022	-7,107254	-7,090486
2	TGARCH (1,1)	t	7397,302	-7,371872	-7,352309
3	**TGARCH (1,1)**	**GED**	**7446,137**	**-7,420585**	**-7,401022**
4	TGARCH (1,1)	t with fixed df	7289,874	-7,265709	-7,248941
5	TGARCH (1,1)	GED withe fixed P	7290,150	-7,265985	-7,249216
6	EGARCH (1,1)	Normal (Gaussian)	7115,437	-7,091708	-7,074940
7	EGARCH (1,1	t	7412,826	-7,387358	-7,367795
8	**EGARCH (1,1**	**GED**	**7433,136**	**-7,407617**	**-7,388054**
9	EGARCH (1,1	t with fixed df	7267,578	-7,243469	-7,226701
10	EGARCH (1,1	GED withe fixed P	7245,531	-7,221477	-7,204709
11	PARCH (1,1)	Normal (Gaussian)	7130,949	-7,106183	-7,086620
12	PARCH (1,1)	t	7398,987	-7,372556	-7,350198
13	**PARCH (1,1)**	**GED**	**7448,612**	**-7,422057**	**-7,399699**
14	PARCH (1,1)	t with fixed df	7291,418	-7,266252	-7,246689
15	PARCH (1,1)	GED withe fixed P	7290,530	-7,265366	-7,245803

Source: The Outputs of Eviews.12

We will continue our analysis by estimating the parameters of the conditional mean and variance equations. We used the asymmetric GARCH models EGARCH(1,1), TGARCH(1,1), and PARCH(1,1) for this. We used the Broyden-Fletcher-Goldfarb-Shanno (BFGS) method to estimate the parameters, which helps to solve non-linear problems without constraints. The following table shows the results.

Table 5

Results of asymmetric GARCH model estimation for the return Index DFMGI

Coefficients	EGARCH (1,1)	TGARCH (1,1)	PARCH (1,1)
Mean Equation			
μ (Mean return)	$7{,}94\text{x}10^{-5}$	$7{,}97\text{x}10^{-5}$	$8{,}04\text{x}10^{-5}$
Variance Equation			
(α_0) constant	-7,443799***	$2{,}52\text{x}10^{-5}$ ***	0,008161
(α_1)	0,813313***	0,8499976***	0,596337***
(β_1)	0,300645***	0,047875	0,013711
(γ)	-0,033130	0,073568	0,027758
$(\alpha_1+\beta_1)$ (persistence coefficient)	1,113958	0,8978726	0,610048
Log likelihood	7433,155	7446,196	7448,612
Akaike Info. Criterion (AIC)	-7,407636	-7,420645	-7,422057
Schwarz Info. Criterion (SIC)	-7,388073	-7,401082	-7,399699
Heteroscedasticity LM			
F-statistic	1,411891{0,2349}	2,961916{0,0854}	1,596432{0,2066}

Source: The Outputs of Eviews.12

From the results shown in Table 5, and considering the AIC and SIC criteria (their lowest value) and the most significant value of the Log Likelihood criterion, it is clear that the best suitable model for modeling the fluctuations of returns of the Dubai Financial Market Index is the PARCH(1,) model.

The sum of the two parameters α and β in the TGARCH(1,1) model is 0.8978726, which is close to 1. This implies that the conditional variance (volatility) is explosive. The leverage

coefficient γ is positive (0.073568), which indicates that negative shocks (bad news) have a more significant effect in increasing volatility than the effect of positive shocks (good news). This provides evidence of the effect of financial leverage. This means that the Dubai Financial Market shows continuous volatility returns with leverage effects (asymmetric news effects).

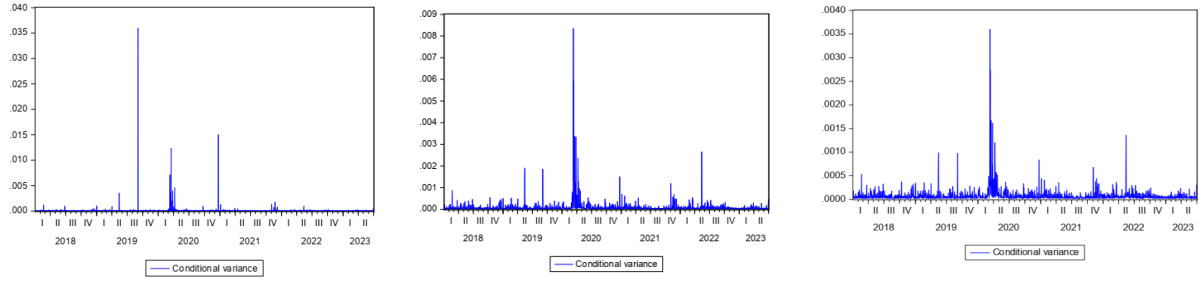

Figure 3. Conditional variance of EGARCH(1,1), TGARCH(1,1), PARCH(1,1)

The negative value of the EGARCH(1,1) model parameter γ (-0.033130) indicates the existence of an effect of leverage, meaning that bad news (negative shocks) generates more volatility than good news (positive shocks).

The positive value of the TGARCH(1,1) model parameter γ (0.073568) demonstrates that bad news (negative shocks) raises volatility more than good news (positive shocks).

Conclusion

In this study, we attempted to model the effect of asymmetric news and volatility in the returns of the DFMGI index of the Dubai financial exchange for the period 01/01/2018 to 06/30/2023 by applying three asymmetric models: EGARCH(1,1), TGARCH(1,1), and PARCH(1,1). The PARCH(1,1) model with Generalized Error Distribution (GED) for the residuals was the best model, as it had the lowest AIC and SIC values. This is consistent with other studies' findings that TGARCH and PARCH are the best models for describing asymmetric volatility. (Banumathy & Azhagaiah, 2015), (Goudarzi & Ramanarayanan, 2010), (Mittal, Arora, & Goyal, 2012). The study also found that bad news (bad shocks) have a greater effect on the volatility of DFMGI returns than good news (positive shocks).

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THE INFLUENCE OF PRODUCT DESIGN ON CONSUMER JUDGEMENT IN GEN-Z AND MILLENNIAL GENERATION: PREFERENCES AS MODERATION

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Abstract. *The objective of this study is to investigate how product design impacts consumer judgment within both the Generation Z and Millennial demographics. Additionally, the research assesses the moderating influence of preferences on the connection between product design and consumer judgment. Furthermore, this study incorporates gender as a control variable. The study's target population comprises individuals from Generation Z and the Millennial generation who possess knowledge about written batik products manufactured by UMKM Batik Banyuripan in Klaten, Central Java. A total of 220 respondents participated in this research, selected through purposive sampling, a technique used to select samples based on specific criteria and considerations.*

The collected data was processed using SEM-PLS. The research results show that product design has a significant effect on consumer judgment. These results also find that preferences have an insignificant influence in strengthening the influence of product design on consumer judgment. This research also finds that gender does not have a different effect on the influence of product design on consumer judgment.

Keywords: *Consumer Sentiment, Taste, Wants, Preference, Individual.*

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Introduction

MSMEs that develop new products (innovations) for new markets need to involve Incorporating customers into the process of new product development (NPD) has a favorable

influence on the success of newly introduced products. (Grunerand Homburg, 2000). Understanding how consumers operate makes it easier for MSMEs to predict which products will sell more, thereby making it easier to produce how much. During the initial phases of new product development (NPD), when the product itself is not yet accessible, and customers cannot take practical actions, it is possible to assess the concept model by conducting a Concept Test with a representative sample of the intended target customers (Ulrich and Eppinger, 2004). Therefore, MSMEs evaluate new products by knowing consumer responses to the products offered.

Consumers frequently rely on their emotional reactions to a stimulus as a source of information to gauge their level of liking or preference for it (Schwarz and Clore 1996; Wyer, Clore, and Isbell 1999). Consumer assessments are simply a series of inputs to the selection process (Johson and Puto 1987). The significance of product design is on the rise and has become increasingly crucial for a company's overall success (Uwera, 2022). Product design holds significance in research because the shape of a product generates an initial impression and leads to conclusions about other attributes of the product (Uwera, 2022).

In today's business landscape, companies must not only focus on the functional quality of their products but also on designs that evoke emotions in their customers. It's important to note that different consumers may respond differently to specific product designs, as individual preferences and perceptions can vary widely (MacDonald, Gonzalez, and Papalambros, 2009). Therefore, creating appropriate product designs that can trigger emotions Striving to attain design objectives can be a formidable challenge (Ishihara, Nagamachi, Schutte and Eklund, 2008; Kobayashi, Kinumura , and Higashi, 2016); Zhou, Ji, and Jiao, 2020; Chen, 2019). This challenge arises because it necessitates a profound comprehension of the target customer and the potential for a range of diverse emotions to come into play (Homburg, Schwemmle and Kuehnl, 2015).

One of the challenges in studying customer judgments is that people cannot explain exactly why or how they make decisions (Bloch, 1995). Therefore, this research seeks further information that influences customer assessment, namely product design. The research that will be carried out has similarities to research conducted by Horvath (2001), namely examining the influence of product design on consumer judgment. The difference is the moderating variables, namely consumer preferences and age. The use of consumer preference moderating variables, adopting Bloch's (1995) model. Consumer judgment of product design (shape) is controlled by consumer differences such as gender. Research on customer judgment is important because Research in judgment and decision making (JDM) holds significant potential to shape both marketing theory and practice. Moreover, the mutual relationship between these two domains is garnering increased attention and interest (Bown, 2007).

Research on product design and consumer judgment was carried out by Bloch (1995), which produced a model of consumer responses to product form. Research findings indicate that design serves a dual purpose, not only facilitating functionality but also establishing it in a distinctive manner. Consequently, design exerts an influence on choices, communication, and positioning, enabling the attraction of consumers and effective communication with them (Bloch, 1995). The research carried out adopted the Bloch (1995) model by adding the age variable as a control variable and this is novel in this research.

Apart from that, based on the analysis of empirical studies, research that raised product design variables with consumer judgment was only carried out by Horvath (2001). Additionally, research in this area is still incomplete. Indeed, there isn't a universally agreed-upon definition of the term 'product design' It can be a subjective and multifaceted concept that varies depending on context, industry, and perspective (Homburg et al., 2015; Luchs and Swan, 2011). There for, the researcher took the topic of product design and consumer judgment with a mediator variable (product design) and a control variable (gender). Recognizing these opportunities requires consumer researchers to develop and use new methodologies to study aspects of judgment and choice that are a unique part of consumer behavior. The difference with previous research is that this research uses decision making theory and examines consumer attitudes towards the products offered so it uses a Likert scale.

Specifically, the problem formulation and aim of this research is to analyze and prove: (1) the significant influence of product design on consumer judgment. (2) Preference moderates the influence of Product Design on consumer judgment, (3) gender controls the influence of Product Design on consumer judgment. This study contributes to the consumer behavior literature, especially the development of decision making theory so that a better understanding of the consumer assessment process and product design variables become more recognized in the marketing literature as forming consumer behavior, namely the part that is considered in consumer assessment. The study of consumer appraisals will significantly increase knowledge about the appraisal process. The focus of our research is on the consumer side, not on the designer/company side and studying product design from the perspective of consumer choice, consumer decision making.

Literature Review

Design product

The definition of product design emphasizes the role of a product's shape in conveying a specific sensory impact Bloch (1995). According to this perspective, product design involves the careful selection and integration of various elements by a design team to create a unified whole that elicits particular sensory responses. In essence, product design is a fusion of attributes that shape a product, encompassing its visual and tactile characteristics as well as the features that govern its functional capabilities. Additionally, product design encompasses a collection of fundamental elements within a product that consumers perceive and mentally organize. These elements collectively form a multidimensional construct consisting of aesthetics, function, and symbolism, reflecting the intricate nature of how consumers perceive and interact with products (Homburg, Schwemmle and Kuehnl, 2013). Design indeed forms the core of innovation. Product design goes beyond merely enhancing aesthetics or creating software; it encompasses all design-related processes throughout physical production. A product can be deemed well designed only when it aligns with the needs and preferences of its target market, effectively fulfilling its intended purpose (Patil, Sirsikar and Gholap, 2017). Contemporary product design is a deliberate, systematic, and purpose-driven creative process that unfolds in a structured manner (Cheng, 2018).

The product design and development process represents a continuous improvement cycle that evolves over time, characterized by iterative feedback and contributions from various stakeholders such as development team members, executives, sales and marketing departments, and production teams. Contemporary trends in product design and development include shorter innovation timelines, greater integration of customer input into the development process, and a growing emphasis on multidisciplinary collaboration in the creation of new products. Nonetheless, it's worth noting that different companies may employ distinct strategies to translate market demands into marketable products (Patil et al, 2017). In broad terms, product design typically encompasses four phases, which are the research phase, analysis and positioning phase, conceptual design phase, detailed design phase, and output design phase. However, the details of each stage can vary and become more complex depending on the specific design objectives and the nature of the project at hand (Cheng, 2018).

Product design involves the adoption of completely new products or may require refining or improving existing designs, to increase functionality, performance or appeal. However, product design does not always tend to adopt the use of new technology to create new products. Design is primarily concerned with introducing changes in function and concept. (Patil et al., 2017).

Customer Judgement

To make a judgment means to form an opinion or estimate. Judgments can be general such as estimating the overall similarity between objects or specific such as expressing a rank order preference, but this is not optional. Consumer assessments are simply a series of inputs to the selection process (Johson and Puto, 1987). According to Einhom and Hogarth's (1985) model, people base their judgments on some initial judgments of probability and adjust these estimates by taking into account the likely distribution of these values, or the uncertainty associated with those

values. Personal experiences, or experiences passed on by word of mouth from friends or relatives, disproportionately influence consumers' assessments of product or service performance (Hoch, 1984 and Alba and Marmorstein, 1986).

Design Product and Consumer Judgement

Preference theory, rooted in psychology, has demonstrated that the context surrounding a decision significantly impacts the decision's outcome. This is because preferences and judgments are not pre-existing in the brain but are formed in response to the stimuli presented during the decision-making process. Functional and hedonic evaluations play a crucial role in shaping the overall assessment of a product, both through direct and indirect evaluations (Kempfand Smith, 1998). n a direct manner, the overall evaluation of a product stems from the assessment of two distinct types of benefits. The functional aspect pertains to the utilitarian and practical attributes of the product, while the hedonic aspect pertains to the aesthetic, sensory, and symbolic characteristics (Mahlke and Thüring, 2007).

Consumers tend to prioritize the functional benefits of a product over its hedonic benefits until their basic expectations for meeting utilitarian needs are satisfied (Chitturiet al., 2007). In addition to their direct impact, functional and hedonic evaluations also exert influence on the overall product assessment through indirect pathways, involving emotions (Mahlke and Thüring, 2007). The physical appearance of the product will likely stimulate them to evaluate the product and, as a result, form an initial impression of the product. Then they may use this impression as a basis (Yeung and Wyer, 2004). The design process is oriented towards eliciting emotional responses (Kreutzbauer and Malter, 2005). Product designs tend to evoke positive emotional reactions when they surpass expectations in delivering relevant benefits. The shape of the product influences the customer's assessment of purchasing and using the product (Reid, MacDonald and Du, 2014). The research results of Red et al., (2013) show that people are inconsistent in assessing the preferences and style of coffee pots displayed in realistic shapes and cars displayed in FSV silhouettes.

Based on the description above, the hypotheses that can be prepared are:

H1= Product Design has a significant effect on consumer judgment.

The previous process, consumers responded to the products offered, such as product design. Responses to product design are not solely a reflection of the product's inherent qualities; they are also influenced by the characteristics of the evaluators and their unique experiences (Kumar M, and Noble CH, 2016; Kang and Park, 2016). In this research, consumer preferences are included as a moderating variable. Using consumer preferences as moderating, adopting the Bloch (1995) model, namely the model of consumer responses to product form. Based on the description above, the hypotheses that can be prepared are:

H2: Consumer preferences moderate the influence of Product Design on consumer judgment.

Social role theory proposes that disparities in social behavior between genders arise from commonly held expectations regarding what behaviors are deemed suitable for men and women (Karakowsky & Elangovan, 2001). The results of research conducted by Abubakar et.al (2017) show that men trust more than women; The results show significant differences between men and women. If based on segmentation and targeting, one of the components is grouping based on gender (Kotler and Keller, 2016). Consumer behavior is determined by consumer characteristics, namely demographic, psychological and social characteristics (Kotler, 2016). Demographic characteristics include age, education, gender, employment income. Research findings indicate that gender has an impact on respondents' preferences for information processing (Hovard, 2001). Gender differences exist in how respondents prefer to process information. Female respondents tend to place importance on processing both visual and verbal information, displaying a higher level of sensitivity in information processing.

Companies when making product designs must know the detailed needs and desires of female and male consumers. This is done so that the product design is right on target. After product

design and before the product is mass produced, one stage needs to be carried out, namely market testing. Companies must ensure consumer response (judgment) regarding the design of the products offered. To be more precise, it is necessary to know the judgment of male and female consumers so that we can be more certain about the product that will be produced. Based on the description above, the hypothesis that can be prepared is

H3: gender controls the influence of Product Design on consumer judgment.

Methods

The type of research is explanatory research, the relationship between variables and the object studied is more of a cause and effect nature, from these variables we then look for how much influence the independent variable has on the dependent variable (Sugiyono, 2019). This type of research is used because the researcher wants to explain the relationship between variables, namely product design as an independent variable which influences consumer judgment, namely the dependent variable. The research was conducted to respond to written batik products produced by UMKM Batik Banyuripan, Klaten, Central Java.

The research population is generation Z and the millennial generation who have knowledge of written batik products produced by UMKM Batik Banyuripan, Klaten, Central Java. Determining the sample size using the Matchin, Campbell, Tan, and Tan (2009) formula. The results of calculating the number of samples obtained a sample size of 220 respondents. The choice of purposive sampling as the sampling technique in this research is well-suited. Purposive sampling involves selecting specific samples based on predefined criteria or considerations, aligning with the research objectives and requirements. This approach allows for a targeted and deliberate selection of participants that meet the specific criteria relevant to the study (Sugiyono, 2019).

Researchers distributed questionnaires in the form of a Google form to generation Z and millennial generations who had knowledge of written products produced by UMKM Batik Banyuripan, Klaten, Central Java. The distribution of questionnaires via Google Form is carried out by sharing the Google Form questionnaire link on social media such as WhatsApp stories, Instagram stories and Instagram bios with notes from generation Z and the millennial generation who have knowledge of written products produced by UMKM Batik Banyuripan, Klaten, Java Middle.

The use of a Likert scale in this research is appropriate because it is a commonly employed tool to gauge the attitudes, opinions, and perceptions of individuals or groups regarding various social phenomena. It provides a structured method for collecting and quantifying responses on a range of issues or topics (Sugiyono, 2019).

This research uses inferential statistical analysis. Inferential statistical analysis using SEM PLS. The significance level used is 5%.

Results

Table 1
Factor Loading

Variable	Indicator	Consumer Judgement	Preferences	Product Design	Moderating effect	Factor Loading
Product Design	PD1	.501	.384	.728	-.094	
	PD2	.513	.382	.766	-.100	.766
	PD5	.512	.289	.742	.011	.742
	PD6	.527	.253	.772	.078	.772
	PD7	.526	.293	.746	-.115	.746
	PD8	.457	.365	.717	-.143	.717
	PD10	.578	.310	.810	.102	.810
Preferences	P6	.388	.748	.341	-.177	.748
	P7	.454	.827	.356	-.299	.827
	P8	.394	.801	.325	-.265	.801
	P9	.366	.720	.254	-.112	.720
	P10	.519	.840	.321	-.228	.840
	P11	.488	.753	.393	-.156	.753

Consumer Judgement	CJ2	.799	.441	.522	-.096	.799
	CJ3	.866	.557	.555	-.213	.866
	CJ4	.819	.394	.633	-.031	.819
	CJ6	.735	.419	.493	-.109	.735
Moderating Effect		-.140	-.266	-.043	1.000	1.151

Each indicator of the Product Design, Preferences, and Consumer Judgment variables has an outer loading value of more than 0.700, so it can be said that each indicator is valid.

Table 2
Model Fit

Variables	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Consumer Judgement	.819	.881	.650
Preferences	.873	.904	.612
Product Design	.874	.903	.570
Moderating Effect	1.000	1.000	1.000

The results show that this research model meets the elements of model fit so that it can be continued with hypothesis testing.

Table 3
Hypothesis Test

Hypothesis		Original Sample	t-value	p-value	Results
PD → CJ	H1	.547	9.039	.000	Support
Male		.434	3.384	.001	Support
Female		.591	8.819	.000	Support
Moderating effect CJ	H2	-.027	0.637	.524	Unsupport
Male		-.109	1.155	.248	Unsupport
Female		-.015	.252	.801	Unsupport

Based on Table 3, the results of the hypothesis test can be seen as follows:

The results of the PLS analysis show a probability value of 0.000. The probability value of 0.000 which is smaller than the significance value of 0.05 (Alpha 5%), or 0.000 < 0.05 and t-count 9.039 > t-table 1.96. The results of this test show that H1 is accepted, meaning that product design has a significant effect on customer judgment. The original sample value is 0.547, which means that the direction of the relationship between product design and customer judgment is positive. The existence of positive results between product design and customer judgment shows that the higher and better the product design will increase customer judgment.

The results of the PLS analysis show a probability value of 0.524. The probability value of 0.524 is greater than the significance value of 0.05 (Alpha 5%), or 0.524 < 0.05 and t-count 0.1637 < t-table 1.96. The results of this test show that H2 is rejected, meaning that consumer preferences do not moderate the influence of Product Design on consumer judgment. The original sample value is -0.027, which means that the direction of the relationship between product design and customer judgment is negative.

The results of the PLS analysis for influence show that the probability value for men is 0.001, while the probability value for women is 0.000. Thus, product design has a significant influence on customer judgment. There are no differences between the results between the male and female groups so that gender is not a control variable. The influence of ct design has a significant

effect on customer judgment. Gender is also not a control variable for the influence of preference as a moderator.

Discussion

The findings show that product design has a significant effect on consumer judgment. While product design has a determining role in shaping consumer responses. If we pay attention to the decision-making process, when a company first introduces a product and when consumers look for information about a product, consumers make an assessment. The findings indicate that product design indeed functions as a "distinctive marketing tool" that influences the attractiveness and captures attention when consumers first engage with the product, prior to the selection stage. Consumers, particularly from Generation Z and the Millennial generation, have access to a wide array of products across nearly every market segment. According to Benaissa and Kobayashi (2022) design is the main added value. This is proven in this research from a consumer's perspective, product design can influence consumer judgment. We know that judgment from consumers can be positive or negative. The results of the assessment can be different because it's important to note that not all consumers react in the same way to specific product designs. Individual preferences and responses can vary significantly (Palmer, Schloss and Sammartino, 2013). Product design significantly influences consumer evaluation of a product (Bloch, 1995). Product design has a determining role in shaping consumer choices and at the same time determining consumer use experiences.

The outcomes of this research diverge from Hovard's research, indicating that product design serves as a "distinctive marketing tool" influencing attractiveness and capturing attention during the selection process. This influence is attributed to external factors, product appearance attributes, and product aesthetics. The difference is in the role of consumers in evaluating product design. This research is at the product design assessment stage as a form of response, this is the stage before selection. The results of this study prove the importance of the “first impression” when it comes to marketable products with respect to their design. Meanwhile, in Hovard's (2001) research, the role of consumers is when paying attention to product design when making a selection. The structure of consumer judgments regarding products is similar in two contexts: choice and use (Hovard, 2001). Therefore, assessments of different product designs are not only made in the context of choice and context of use, but are also made in the context of consumer responses when the company introduces the product (during the awareness stage) and in the context of the alternative evaluation process.

The product choices made by consumers are the result of consumer assessment. Consumer evaluations are simply a series of inputs to the selection process (Johnson and Puto, 1987). It is the interaction between the product and its users that creates the final evaluation of the goodness of the product design (Hovart, 2001). The success of product design must come from the interaction between the maker (designer) and the user (consumer) (Hovart, 2001).

The research results show that consumer preferences do not significantly strengthen the influence of Product Design on consumer judgment. Product design responses do not only reflect the nature of the product, but also the characteristics of the assessors and their experiences (Kumar M, and Noble CH, 2016), Kang and Park, 2016). However, this research shows that consumer responses in assessing product design are not strengthened by consumer preferences. The results of this research are different from the Bloch (1995) model which shows that preference is a moderating variable between product design and consumer judgment. The differences in research results can be explained if we look at the research results which are in accordance with Hovard's (2001) research results showing that product design determines consumer responses regarding the product (assessment of usefulness, aesthetic and hedonic value). If seen from the point of view of consumers who play the role of potential buyers, then in responding to product design they are still purely looking at the product. However, if it has changed to the evaluation stage of the product design to become an option for purchase, then preferences will play a role in the evaluation process, which will strengthen the decision to choose that product design. When related to this research

sample, the millennial generation and generation Z do not consider consumer preferences in the consumer judgment process regarding product design. Current research reflects the perspective of generation Z and millennial consumers who are more external and foreign in judgment. If research is about consumer judgment in the context of selection or use, consumer preferences will strengthen judgments about product design. Consumer preferences do not strengthen this relationship because the consumption behavior of students (millennials) is currently influenced by a lifestyle that tends to follow trends (Amanda and Riyanto) so they ignore preferences.

This research can be concluded that for the millennial generation and generation Z, product assessment is only influenced by product design, without any other influence in the process such as consumer preferences. Each target market group is different, so the emphasis in assessing is also different. Additionally, millennials desire ultimate consumer control: what they want, how and when they want it (Sweeney, 2006). The millennial generation has high control as product design influences consumer judgment without being influenced by consumer preferences. The evaluation process will continue if consumers want it. The reason consumer preferences do not significantly strengthen the influence of product design on consumer judgment is also because the Millennial The current generation expects the products and services they choose to offer a high degree of personalization and customization options to accommodate their evolving needs, interests, and preferences (Sweeney, 2006). The millennial generation likes what can provide the results they want at a certain time (Sollohub and Sweeney, Millennial generation feels comfortable expressing themselves (Tapscott, 1998), such as batik which can show self-expression.

Conclusion

The research results show that product design has a significant effect on consumer judgment. These results are important findings in consumer behavior, especially related to the assessment of batik products. Consumer preferences do not significantly strengthen the influence of product design on consumer judgment. Gender is not a control variable in this research model so that gender does not have different results in the context of consumer judgment. For further research, researchers can use consumer preferences as an intervening variable between product design variables and consumer judgment variables.

Regarding gender, men are more rational than women, so men and women will have different views in evaluating/evaluating (Kotler and Keller, 2016) such as product design evaluation. Product design responses reflect not only the nature of the product, but also the rater's characteristics such as gender. However, the results of this study show that gender does not control the product design variable on consumer judgment. This shows that gender is not a differentiator for consumers in evaluating batik products.

An important practical implication is that the research results show that product design influences consumer judgments regarding products. It is also clear that certain design characteristics produce definite directions of consumer evaluation. With the target market being the millennial generation and generation Z, showing product design is important in consumer judgment. Therefore, companies create product designs according to their target market. Products with the same technical value can be positioned differently to different consumer groups based on their design. A limitation in the research, this research is not firm in that consumer judgments regarding products are investigated in context, such as in the context when a new product is offered, in the evaluation process, selection stage or use stage.

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THE IMPACT OF THE APPLICATION OF ARTIFICIAL INTELLIGENCE ON THE ECONOMIC PERFORMANCE OF THE INSTITUTION

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Abstract. *Our study aims to know the impact of the application of artificial intelligence on the economic performance of the institution, by studying the relationship between the application of artificial intelligence and economic performance indicators represented in the rate of profit development and the rate of development of services provided to the customer, as our study was projected on the Onpassive institution during the period (2018-2023), Using the multiple linear regression method through the statistical program (EVIEWS9), the study finally concluded that there is a relationship between the application of artificial intelligence and the rate of development of profits, and the existence of a positive relationship between the application of artificial intelligence and the rate of development of services provided to the customer.*

Keywords: *Artificial intelligence, economic performance, economic performance indicators, United Arab Emirates.*

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Introduction

Artificial intelligence (Acemoglu, 2011) represents the most important output of the fourth industrial revolution due to its versatility in the military, industrial, economic and technical fields, medical, educational and service applications. (Aghion, 1997) With the massive and rapid technological development and the changes the world is witnessing in light of the fourth industrial revolution (Antonin, 2017), artificial intelligence will be the engine of progress, growth and prosperity during the next few years, and it and its innovations can establish a new world that may It now seems like a fantasy.

In addition to the great economic opportunities provided by artificial intelligence (Stefano, 2018) to many economic sectors in the country (Nick, 2005), and its ability to achieve huge profits while applying its uses and relying on the information and advice it provides, and its effects in reducing dependence on the human element. and employment, (Autor, 2017), which raises the quality of products and reduces spending. (Benhamou, 2018) and to promote the development and acceleration of the activation of artificial intelligence applications (Agrawal, 2017), at all levels of government and private, many countries have adopted many mechanisms, including the development and development of specialized scientific competencies and local capabilities in the field of artificial intelligence, (Cockburn, 2018) and training Institutional employees by involving them in specialized courses in data science, and creating a culture of artificial intelligence among groups of society to facilitate the spread of the use of applications that depend on these technologies and create a digital citizen who is able to deal with them, (Cohen, 2018) and enhance the concerted efforts of institutions to raise awareness of the basics of this field, In addition to the previous effects of artificial intelligence (Fujii, 2018), its application has effects on the social, economic and financial performance in the organization (Luis, 2014).

Whatever resources are available to the economic unit of various resources, it can only be exploited through rational, developed and good management, to represent a centered axis with knowledge and to measure the extent of failure and success of the economic units in their decisions

and the results they reached and the missed opportunities in order to determine their future plans. Except by evaluating its performance, especially economic performance (Aghion, 2014), as it is considered a means of predicting the position that the institution will be in in the future.

The importance of the research is embodied in the importance of the economic performance of the economic units in the use of economic resources to achieve their objectives (Commander, 2011), where the economic performance of the Onpassive institution is evaluated, through a set of economic indicators to know the efficiency of the institution's performance and its ability to exploit the resources and productive capacities available to it, as well The research aims to show the impact of the reflection of the application of economic intelligence on economic performance, through the application in the Unpassive Foundation and using indicators related to economic performance during the period 2018-2023.

The research is based on a main hypothesis that the application of artificial intelligence is reflected in the statement of its impact on economic performance through a set of economic indicators.

Literature Review

Here we review some concepts and terminology, as well as studies on the subject of our study.

1. Artificial intelligence

A term that has increased in use recently in light of the technical renaissance that the world has witnessed in the field of developing machines. (Furman, 2018) We can briefly say that artificial intelligence (Cruz, 2002) is a branch of science that is concerned with machines that can solve the kind of problems that humans resort to when solving them to their intelligence.

Often, the term “artificial intelligence” (Gadam, 2018) is not associated with machines as a whole, but rather with computer programs that are installed on these devices, which are characterized by certain behavior and characteristics that make them simulate the mental capabilities of humanity (Grabher, 2017) and their work patterns. Artificial intelligence applications can be divided into several areas, including artificial intelligence in games, proving theories of logic and mathematics, image recognition, and machine learning (Logg, 2018).

2. Economic performance

With regard to economic performance, (Kaufmann, 2002), it represents the ability of the economic institution to gain the trust of shareholders and customers, and this performance is measured through the information contained in the financial statements. In formulating its strategy and improving its level of performance, in order to support its decisions and develop its future plans (Knack, 1995).

Nelson and Sambat (2001) identified three different uses of enterprises as a variable affecting economic performance. First, there is the Game Approach Rule (1990, 1994). In fact, this approach is implied in Coase (1960) and focuses on the influence of institutions on transactions between economic actors. In this approach, organizations are well-understood rules of the game which may or may not guarantee some degree of predictability of the behavior of individuals or firms. To the extent that institutions are conducive to predictability, they encourage contracting between economic actors (Alam, 2020).

The second approach to foundations is related to Williamson (1975, 1985), but again was first put forward by Coase (1937). In this approach, organizations are "governance structures" rather than "rules of the game". The focus here is on ownership structures, hierarchies, company culture, or agency problems. The question that this approach addresses is the following: How do institutions enable economic actors to avoid the outcomes of the prisoners' dilemma or prevent the failure of collective action in their repeated interactions? One way organizations can help solve such problems is the guarantee they provide of well-defined property rights (Coase, 1937). Another way is through statutory or voluntary governance standards that can mitigate agency problems, in which agents (public or private actors) act against the interests of the managers (citizens, consumers, stakeholders, etc.) who appoint them to carry out a particular task. The difference between this approach and the previous one may not be obvious, but it can be articulated as follows: 'institutions

as governing structures' are a system of rules that enable economic actors to avoid agency problems or prisoner's dilemma situations that may arise when 'institutions as rules of the game' Either ineffective or absent (Ali, 2021).

The third approach to institutions is related to Axelrod (1984). In his comprehensive analysis of cooperation, Axelrod explores how cooperation can emerge in a world of self-interested actors (great powers, corporations, or individuals) when there is no central authority to monitor their actions. He notes the importance of internal norms that encourage cooperative behavior within large groups that, according to Olson (1971 and 1982), have teamwork problems that prevent them from cooperating. Within this framework, organizations can solve information and sanctions problems in a decentralized manner (Dixit, 2008). In this framework, the institutions are more or less informal and emerge as a result of repeated actions indicating information about potential business partners or a succession of partners when the latter cheat.

Methods

The current study was conducted at the level of Onpassive Foundation.

ONPASSIVE is an IT company focused solely on building a one-stop business solution. The organization aims to bring innovation, provide value, and maximize business potential with less effort and greater impact. The company was established in 2018. The company's headquarters are in Dubai, United Arab Emirates, specifically in Burj Khalifa. The company has headquarters in the United States of America, India, Singapore, Bangladesh and Egypt as well.

ONPASSIVE provides specialized business solutions by augmenting human intelligence with artificial intelligence. Its mission is to open up new possible ways for leaders around the world to start their businesses in the places they care about. The fully automated platform provides easy business solutions to create a successful enterprise. It helps business owners to hack their growth with the help of its in-house AI tools designed by the dedicated team.

ONPASSIVE provides exceptional AI solutions and services adhering to globally recognized standards and leading technology trends. Companies can benefit from the platform and achieve business goals, thus leading them to success.

It has highly AI-optimized business solutions and services for a wide range of industry areas. Some of its major services include Business Development, Automation Tools, Corporate Digital Transformation, Seamless Connectivity, Business Process Management, Complete Business Infrastructure Tools, Website Designing, Digital Marketing Services and Multiple Corporate Smart Tools.

The market-level model definition is used by the VAR applications in marketing that were mentioned in the preceding section. For the sake of this research, we assume that the data at hand provide a model formulation at a higher disaggregate (store) level. specified at the store-level. Additionally, we consider T (the time period) to be rather vast (Beck, 2001).

The following structure describes a generic VAR model of order P for cross section i (i 1, N):

$$A_{i,0}Y_{i,1} = \alpha_i \oplus \sum_{t=1}^{p} A_{i,t}Y_{i,t=1} \oplus u_{i,t} \quad (1)$$

Where Ait is a k k matrix containing the immediate response parameters for t 0, and the delayed reaction parameters for t 1, 2, (Beck, 2001) and P for cross-sectional unit i, and Yit is a k-dimensional vector of endogenous variables of cross section i at time t. The cross-section-specific intercept vector i.i.d. ai and the disturbance term uit both have the form uit N (0, i), where i is often taken to be diagonal. The VAR model's structural representation for cross section i looks like this (Bemmaor, 1999).

Equation (1) may be multiplied with any nonsingular k k matrix to provide a representation of the process that is equivalent. By pre-multiplying Equation (1) with A, the model is simplified to the following form, which is as follows:

$$Y_{i,t} \equiv \beta_I \oplus \sum_{t=1}^{p} C_{i,t}Y_{i,t=1} \oplus \varepsilon_{i,t} \quad (2)$$

The Equation (2)'s model has P k parameters. Additionally, compared to the estimation of the same number of parameters in a typical econometric model, VAR estimation processes depend on asymptotics in T for consistency of the parameter estimates, necessitating even more observations. Therefore, a common issue in applications of VAR models is a lack of degrees of freedom, which leads to inaccurate estimation outcomes (Binder, 2001).

For the third modeling strategy, we presum that cross-section specific intercepts may adequately represent the cross-sectional variability. We focus on Fixed Effect Models (FEMs), (Box 1994) which have fully pooled other parameters but a cross-section-specific intercept. We define the unit-by-unit models in Equation (2)'s FEM analog as:

$$Y_{i,t} \equiv \beta_i \oplus \sum_{i=1}^{p} C_t Y_{i,t=1} \oplus \varepsilon_{i,t} \quad (3)$$

where ci t i.i.d. N(0,1) exists. Specified in log-log form, the VAR model incorporates sales response functions. For these equations, a shop-specific intercept may account for variations in sales brought on, for instance, by store size. The FEM may capture adequate cross-sectional heterogeneity while maintaining a high degree of freedom if it is plausible to assume that consumers of the various stores respond to promotional activities with the same elasticity.

As for the economic performance index, where two indicators were used in this study, the profit development index, which is measured by the difference between the profit of the current year and the previous year divided by the profit of the previous year, and the rate of services provided to customers, it is measured by the difference between the volume of services provided in the current year and the volume of Services provided in the previous year, divided by the volume of services provided in the previous year.

Results

By observing Figure 1, we find that the profit rate has witnessed a significant increase in all its components, as it was estimated in the year 2019 at 1.5 million dollars, to reach the year 2020 at a value of 2.2 million dollars, in the year 2021 it was estimated at 2.73 million dollars, in the year 2022 it was estimated at 3.01 million dollars, to reach 3.94 million dollars. The continuity of the rate of profits in increasing indicates the continuation of the institution in raising the level of its system, and the optimal exploitation of its available energies, while continuing to raise the efficiency and effectiveness of its activities.

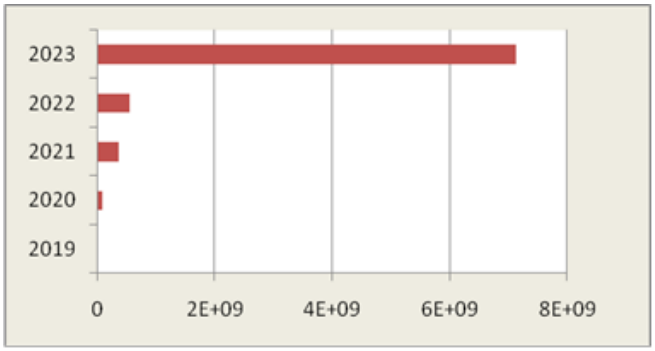

Figure 1. Evolution of the onpassive profit rate

Source: own calculations in IVIEWS24

By observing Figure 2, we find that the rate of services provided to customers has witnessed a significant increase in all its components, as it was estimated in 2019 at 8,878,994, to reach in 2020 a value of 98,029,409, in 2021 it was estimated at 362,396,283, and in 2022 it was estimated at 55,216,1980, to reach 7120716645, the continuous increase in the rate of services provided to customers indicates the continued ability of the institution to perform the service required of it in an accurate and reliable manner, and to work on the ease and facilitation of obtaining service from the customer.

Through the results shown in Table 1, it is noted that the level of artificial intelligence is statistically significant because its probabilistic value amounted to 0.0356 less than the significance level of 0.05, and the value of the R-squared determination coefficient is 0.593623, meaning that

the application of artificial intelligence explains its value of 59.3623%, from Changes in the rate of profit development.

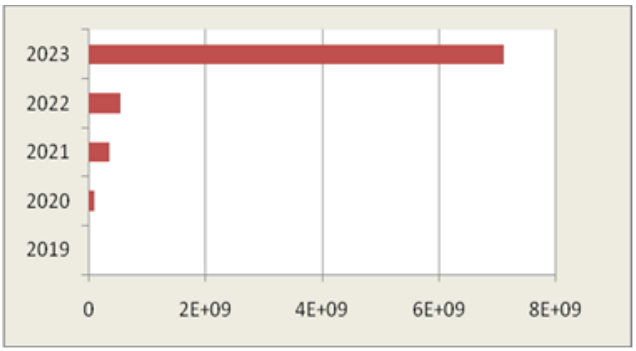

Figure. 2. Evolution of the rate of services provided to customers in the onpassive institution

Source: own calculations in IVIEWS24

As for the probability value of the Fisher Prob (F-statistic), it is estimated at 0.012351, which is less than the level of significance 0.05, which means that the estimated model is significant, and from it there is a statistically significant effect, and this confirms the validity of the hypothesis that indicates the existence of The impact of the application of artificial intelligence on the rate of profit development.

Table1

Measuring the effect of applying artificial intelligence on the rate of profit development

Variables	coef	T-test	p
C	9.56879	2.369874	0.0458
AI	1.254698	2.357896	0.0356
R-squared	0.593623	F-statistic	0.026145
R-squared Adjuste	0.352388	Prob (F-statistic)	0.012351

Through the results shown in Table 2, it is noted that the level of artificial intelligence is statistically significant because its probability value amounted to 0.0256 less than the significance level of 0.05, and the value of the R-squared determination coefficient is 0.498763, meaning that the application of artificial intelligence explains its value of 49.8763%. From the changes in the rate of services provided to customers, and the probability value of the Fisher Prob (F-statistic) is estimated at 0.025469, which is less than the level of significance 0.05, which means that the estimated model is significant, and from it there is a significant statistically significant effect, and this confirms the validity of the hypothesis that indicates There is an impact of the application of artificial intelligence on the rate of services provided to customers.

Table 2

Measuring the effect of applying artificial intelligence on the rate of services provided to customers

Variables	coef	T-test	p
C	8. 265789	3.569874	0.0458
AI	1.259947	2.635498	0.0256
R-squared	0.498763	F-statistic	0.0125487
R-squared Adjuste	0.248764	Prob (F-statistic)	0.025469

Conclusion

The field of application of artificial intelligence is a wide field (Ponce, 2018) and it is divided into many different applications and is used in many fields, including the economic field. that he enjoys.

Through our applied study, the Onpassive Foundation uses artificial intelligence in the operations of managing and conducting its various activities, as these applications differ from one institution to another according to the type of activity of the institution, as the application of artificial intelligence within the Onpassive institution contributed to facilitating the operations of managing its activities, and the application of artificial intelligence within the institution also contributed Onpassive in providing great assistance to employees in the completion of their tasks, due to its superior ability to carry out the most difficult tasks. Thanks to the application of artificial intelligence, the Onpassive Corporation has achieved the best results while providing the best services to the customer, and this is what contributes to the development and prosperity of the organization, and enhances its competitiveness in a modern economic world. and evolution.

The application of artificial intelligence within the Onpassive Foundation also helped to shorten the time due to its speed and accuracy in completing the required tasks.

The application of artificial intelligence within the Onpassive Corporation also contributed to improving the economic performance of the organization, as it had an impact on improving and developing the rate of profits, as well as the development of the rate of services provided to the customer.

Recommendations:

- The need for the organization's management centers to pay attention to the concept of artificial intelligence and the user behavior, training and development processes.

- Adopting policies and procedures that increase the level of workers' awareness of the importance of artificial intelligence by holding training courses for its employees.

Updating and developing artificial intelligence programs used to enable different departments to take appropriate decisions at the right time.

- Educating institutions on the need to use artificial intelligence applications in managing the activities of institutions, especially those of an economic nature.

- Benefiting from these applications as much as possible in the operations of running institutions and trying to make them create added value for the institution.

- Allocating a financial cover that allows the purchase of these applications for use by institutions, because of their positive return on the profitability of institutions

- Encourage scientific research in this field and establish centers equipped for this research to develop local competencies and benefit from them as much as possible.

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